Industrial Product Warranties: Policies and Practices

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Industrial Product Warranties: Policies and Practices

by E. Patrick McGuire

A Research Report from The Conference Board

Contents

	Page
ABOUT THIS REPORT	iv
FOREWORD	v
INTRODUCTION	1
Supporting Company Products	1
Defining and Limiting Liabilities	1
Competitive Need	2
Warranties under the Uniform Commercial Code	2
Industrial Warranties and the Magnuson-Moss Warranty Act	3
1. COMPANY RESPONSIBILITIES DURING THE WARRANTY PERIOD	4
Variations in Protection during the Warranty Period	5
Variation of Warranty Practice within Companies	5
Intraindustry Variations in Industrial Product Warranties	6
Variation between Domestic and Export Warranty Practices	6
Extended-Term Warranties	7
2. ORGANIZATION OF THE WARRANTY ADMINISTRATION FUNCTION	8
Reporting Relationship of the Chief Product Service Executive	9
Organizing the Service Function as a Profit Center	9
The Use of Warranty Terms in Product Advertising	10
Means of Providing Warranties	10
Double Notice	11
Product Maintenance during the Warranty Period	11
3. COSTS OF WARRANTY SERVICE AND REPAIR	13
Type of Product Manufactured	13
Size of Firm	14
Length of Warranty Period	14
Availability of Service Contracts	15
Availability of Extended Warranty Coverage	16
"Age" of Firms' Warranty Policies and Practices	16
4. LIABILITY LIMITS AND DISCLAIMERS	18
Limitations on Use	18
Limitations against Implied Conditions of Merchantability	19
Limits to First-Party Purchasers	20
Losses Limited to the Value of the Product	21
Prorated Use Limitations	23
Patent Protection Clauses	23

5. TRENDS IN WARRANTY COVERAGES AND CONDITIONS 25
Trends in Requests for Warranty Repairs and Service 26
Awareness of Warranty Rights 26
Inflationary Pressures and More Costly Product Repairs 27
Declines in Product Quality 27
Poor Maintenance by Customers' Personnel 27
Complex, Service-Sensitive Products 27
Product Misuse 27
Warranty Problems in the Future 28
Problems of Cost 28
Increased Government Regulation 28
Rising Expectations of Customers 28
Increased Litigation and Product Liability 29
Dealer and Customer Education 29
Recordkeeping Problems 29
Competent Product Service Personnel 29
Other Problems 30

APPENDIX: WARRANTY EXHIBITS 31

Tables

1. Primary Reasons why Manufacturers Provide Warranties on Industrial Products 1
2. Length of Extended Warranty Periods Offered in Various Industry Sectors 7
3. Reporting Relationship of Company Function that Administers Warranty Program 9
4. Reporting Relationship of Chief Product Service Executive 9
5. Warranty Costs in Various Product Sectors 13
6. Warranty Costs in Various Size Firms 14
7. Warranty Costs Compared with Length of Warranty Period 15
8. Warranty Costs and Service Contracts 15
9. Warranty Costs of Firms Offering Extended Warranty Coverage 16
10. Liability Limits and Disclaimers Included in Warranties 18
11. Single Most Significant Change in Warranty Programs during the Past Five Years 25

Charts

1. Variation of Warranty Practice and Terms within Companies 5
2. Variation between Warranty Terms for Domestic and Export Products 6
3. Company Function Directly Responsible for Administering Warranty Program 8
4. Profit-Center Status of Service Function 9
5. Means of Providing Warranty Terms to the Buyer 11
6. Source of Product Maintenance during Warranty Period 11
7. Trends in Warranty Repairs or Service 26

About This Report

This report examines the industrial product warranty practices of 369 U.S. manufacturing companies. It was prepared in cooperation with the National Association of Service Managers (NASM), and the overwhelming majority of the executives cooperating in the study are NASM members.

The tables below show the sales volumes, types of products sold, and the distribution methods of the firms represented in the study. The range of products manufactured covers the full gamut of industrial goods, from standardized business and commercial supplies to customized, highly technical equipment and components. Virtually all of the firms studied report routine use of warranties for their products.

Sales Volumes of Companies Studied

	Companies	
Sales Volume	*Number*	*Percent*[1]
Under $10 million	43	12%
$10 million to $24 million	71	19
$25 million to $49 million	64	17
$50 million to $99 million	64	17
$100 million and over	125	34
Total	367	100%

[1]Details do not add to total because of rounding.

Types of Products Manufactured by Companies Studied

	Companies	
Types of Product	*Number*	*Percent*[1]
Business and commercial equipment	39	11%
Electrical and communications products	46	13
Heating, air conditioning, and refrigeration products	30	8
Machinery and allied products	53	14
Scientific equipment and control products	59	16
Mobile equipment, vehicles and components	54	15
Other manufactured products	87	24
Total	368	100%

[1]Details do not add to total because of rounding.

Methods of Product Distribution by Companies Studied

	Companies	
Distribution Method	*Number*	*Percent*
Sold directly to users	154	42%
Sold through industrial distributors	116	32
Sold through manufacturers' agents	44	12
Other	53	14
Total	367	100%

Foreword

THE PROMISE that a product is suitable for the use intended, and that a manufacturer will stand behind the product or service it provides, is a well-established tradition among American producers. Warranties or guarantees—the explicit promise of after-sale performance—are offered by both consumer and industrial goods manufacturers. And while virtually all producers in the industrial sector offer some form of warranty for their goods and services, there are substantial variations in the kinds of protection provided, the length of the warranties, and the ways in which a warranty service is managed or demonstrated.

The Conference Board obtained the cooperation of the National Association of Service Managers in surveying their members—industrial product and service executives—and examined the warranty practices of over 300 industrial firms. The Board and its research staff are indebted to the National Association of Service Managers for their help in this project.

This report was prepared under the direction of Earl Bailey, Director of Marketing Management Research within the Management Research Division, Harold Stieglitz, Vice President.

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Introduction

It is common practice for manufacturers to provide the purchasers of their products with written statements guaranteeing the integrity of those products. These statements spell out the firms' responsibilities if the products prove to be defective. Nearly 95 percent of the 369 producers of industrial products whose practices form the basis for this report provide warranties on all of their major product lines. A few use warranties only on selected product lines, and only 1 percent say that they have no written warranties whatever.

Supporting Company Products

The need to support their products is the manufacturers' primary rationale for providing product warranties (see Table 1). Executives point out that delivery of their companies' products is only part of the sales process. Buyers must see the sellers as "standing behind their products." "In our market," the spokesman for an electrical component producer declares, "buyers are investing in future reliability. And our warranties are seen as an expression of company faith in the reliability of the product."

Other executives also confirm that their warranty programs are useful in generating repeat sales. "Our warranty program," one machinery company executive says, "permits us to maintain close contact with the customer. We provide periodic field servicing, and the customer comes to us for replacement parts during the warranty period. Through these mechanisms, we are able to stay in regular touch with our best sales prospects."

Table 1: Primary Reasons why Manufacturers Provide Warranties on Industrial Products

Reason Cited	*Rank Order[1] of Mention*
To support company products ...	1
To define liabilities and responsibilities specifically ...	2
To meet competitive need	3
Other	4

[1]Based on responses of 369 companies. Table reflects the use of a weighted rank order.

Defining and Limiting Liabilities

A second important value of warranty statements is to provide companies with an opportunity for defining clearly the extent of their after-sale obligations and liabilities. In fact, during the hearings on the Magnuson-Moss Act (Federal Warranty), some critics of product warranty programs pointed out that a number of firms may have chosen to use warranties not as a means of enlarging the protection afforded their customers, but rather as a means of limiting the liability that might otherwise exist, in the absence of a written warranty, under the provisions of the Uniform Commercial Code.

Managements are justly concerned about misunderstandings that might occur between buyer and seller over the extent of their companies' obligations to repair or service products

they sell. One equipment company executive says: "Without the warranty, we believe we'd be in a sort of open-ended situation. It's better than not having a statement about our obligations and those of our customers."

More precisely, defining a firm's liabilities does not mean, per se, that customers are being told they have less protection than they thought. Another executive states: "Some of our customers found that we were willing to provide much more backup for our products than they had anticipated."

In other instances, service executives report that the definition of a company's responsibilities, as contained in a warranty statement, helps to overcome any worries customers may have that they will have no recourse in the case of product failure. One executive says: "The warranty avoids a situation in which customers may gripe about a product's shortcomings but feel reluctant to bring it in for servicing. The warranty tells them that we know that some of our products may fail, and, if they do, this is what we intend to do about it."

"Our lawyers just won't allow us to sell products without a warranty," says another service manager. "The warranty statement puts both buyer and seller on notice as to the liability that arises in the event of a product failure. The company's attorneys are much more comfortable with our defining those liabilities, than allowing the customer—or the courts—to define them."

The introduction of a warranty does not necessarily create claims for redress arising out of defective products. After they finished revising their warranties—and expanded their obligations and responsibilities under the warranty—a number of companies surveyed were unable to discern any significant increase in the number of such claims.

Competitive Need

So widespread is the offering of warranties that most firms would be placed at a competitive disadvantage if they did not do so. New competitors entering a market, for example, must provide their entries with warranty protection at least equal to those of established competitors.

Further, the degree and nature of warranty protection is often recognized as a significant product attribute. In a number of industries, one thing that differentiates suppliers, in the minds of buyers, is not so much the initial cost of a product, nor even how long it will last, but rather the amount of after-sales service that will be provided. The product warranty is an integral part of such service considerations.

Of course, having a seller's warranty on a product, and satisfactorily resolving claims under its provisions, are two different things. Two manufacturers may offer prospective buyers essentially identical warranty statements and yet maintain quite different practices in dealing with claims—one being much more "liberal" than the other in meeting customer claims for redress. There is sometimes a notable gulf, service executives point out, between the amount of protection that a company purports to provide under warranty and that which is actually given.

Warranties under the Uniform Commercial Code

Industrial products are subject to the provisions of the Uniform Commercial Code (UCC). The UCC contains four areas directly relating to industrial product warranties. These are described in Sections 2-312 through 2-315; specifically, they deal with:

(1) Warranties of title
(2) Express warranties
(3) Implied warranty of merchantability
(4) Implied warranty of fitness for a particular purpose.

The warranty of title against infringement provides that, in offering the product for sale and contracting to sell it, the seller guarantees the title conveyed is good, that the transfer is rightful, and that the goods being sold are free from any security interest, liens or encumberances unknown to the buyer.

Express warranties arise as a result of any

statements or promises made by the seller to the buyer that relate to the quality and characteristics of the goods. These become part of the bargain itself, thus creating an express warranty that the goods conform to such promises or statements. Express warranties can also arise when the seller provides a sample or model that the buyer accepts as representation of the goods it is contemplating purchasing. The sample or model creates an express warranty in that the goods delivered must conform to this sample or model. One section of the Uniform Commercial Code (2-313) also points out that it is not necessary for the buyer to use words such as "warrant" or "guarantee" for such an obligation to arise.

Unless the buyer and seller agree to a waiver or modification, a warranty that goods shall be merchantable is implicit in a contract for sale if the seller is a generally recognized merchant in that category of goods. Goods are "merchantable" if they:

(1) Would ordinarily pass without objection in the trade;
(2) Are regarded as of fair average quality within the descriptions;
(3) Are fit for the ordinary purposes for which such goods are regularly used;
(4) Are adequately contained, packaged and labeled;
(5) Conform to any promises or statements of fact made on the container label.

Also, if multiple units are involved, the goods are "merchantable" if the materials are of such general kind, quality and quantity as might normally be found within multiple shipments of such units.

The Uniform Commercial Code also describes an implied warranty of fitness for a particular purpose. This proviso is designed to create an obligation on the part of the seller to know the purposes for which the goods are purchased and to make its skill available to the purchaser in the selection and furnishing of suitable goods. In other words, the seller should not knowingly sell a product for an unsuitable end use.

Industrial Warranties and the Magnuson-Moss Warranty Act

"Consumer products" are subject to the Magnuson-Moss Warranty Act, but the law also has a very real impact on warranties for industrial products.[1] To begin with, some products are intended partly or even primarily for consumer applications, but also have significant uses in industrial or commercial situations as well. When their products are sold in both consumer and industrial markets, many manufacturers are inclined to develop a single warranty, based on the requirements of the Magnuson-Moss Act, rather than offering warranties to the separate markets.

Under the provisions of the Magnuson-Moss Act (Section 101.(1)), consumer products are defined as "any tangible personal property which is distributed in commerce and which is *normally* [emphasis added] used for personal, family or household purposes (including any such property intended to be attached to or installed in any real property without regard to whether it is so attached or installed)."

Several manufacturers report that, after considering the Magnuson-Moss Act definition, they have concluded that their products could be considered "consumer products" often enough to justify conformance with the Act. As an example, one battery manufacturer points out that, while more than half of its products are sold for industrial applications, a substantial number are also used in consumer and recreational vehicles. Thus, the company finds that it makes sense to standardize on a single warranty.

In other instances, component items sold by some firms to original equipment manufacturers can still be easily identifiable as parts of consumer products. Often these companies treat their own items as "consumer" products, making certain that their warranties conform to the provisions of the Magnuson-Moss Act (even though the products are never sold directly to consumers; "directly", in this case, meaning the sale of a finished product through a traditional retail distribution system).

[1]Public Law 93-637 (15 USC 2 301).

Chapter 1

Company Responsibilities during the Warranty Period

IN GENERAL, manufacturers of mechanical or electrical products have four primary options for fulfilling warranty obligations that are guaranteed on other than a prorated or extent-of-use basis. They can either:

(1) Replace defective parts, or compensate the customer for the purchase of such parts;
(2) Pay for the service labor required to install new replacement parts, or repair defective ones;
(3) Pay for both the necessary replacement parts and the cost of labor incurred in installing or repairing such parts;
(4) Provide for complete replacement of the faulty product.

The survey data illustrate that a majority of companies pay for both parts and labor for products that fail during the warranty period, usually for one year. Only in the case of the very shortest of warranties—for three months or less—do companies prefer to provide coverage only for the labor costs incurred in making repairs.

Naturally, the extent of warranty coverage granted depends upon the nature of the product, the kinds of use it will receive, the practicality of repair, the kinds of repair and service skills needed, and a host of other factors. Survey respondents whose companies have chosen to supply parts and labor often give the following reasons for doing so:

(1) Providing parts alone would not solve the problem posed by a product breakdown. Often, special installation tools, equipment and skills are needed in order to replace defective parts. Paying for labor to make replacements or repairs, as well as for parts, gives manufacturers greater control over who will do the repairs and how these repairs will be performed.

(2) Except for small, inexpensive items, replacement of the entire product is not a viable alternative for most manufacturers, and, in fact, is not required by the circumstances of most product failures. Those firms that adopt a policy of complete product replacement are often producers of moderately priced components and supplies—items for which repair is not a practical course. Also, compensating customers for labor costs involved with repairs may not be a practical option; in essence, most of the parts needed for repair of many products must be obtained from authorized service outlets—and such establishments are primarily interested in supplying the repair part and installing it.

(3) In the view of some sellers, the company's primary goal of customer satisfaction is best

met when a product's warranty provides "complete protection"—that is, requires no expense on the buyer's part.

Variations in Protection during the Warranty Period

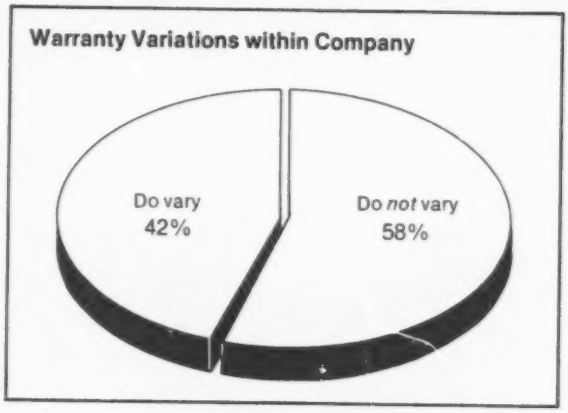
It is not unusual for a manufacturer of consumer goods to construct a warranty that provides for both parts and labor reimbursement during an initial period (e.g., during the first six months after purchase), and then for parts reimbursement only in the period thereafter. This is a less common practice in the industrial goods sector, with fewer than one in ten reporting firms having warranties with different degrees of protection during the warranty period. Of course, countless industrial items can prove to be defective although not subject to the "parts and labor" solution.

The extended-term warranty is a special case. Under this less common arrangement, the buyer is usually offered the option of parts and labor coverage during the normal period of the warranty, with the right to purchase further coverage for an additional time period—but on a less inclusive basis. For example, a manufacturer might warrant a product for one year, agreeing to pay for parts and labor costs for any breakdowns that occurred during this period, and then make available optional extended coverage which promises to pay for the cost of any parts that fail in the ensuing 12 months. The purchaser electing such an option accepts the burden of payment for labor charges associated with installing any parts that fail during the second year of the product's life.

Variation of Warranty Practice within Companies

A majority of the companies surveyed report that the terms and conditions of the industrial product warranties used by various units of their companies are essentially similar (Chart 1). For the rest, there are significant variations between the warranties used to assure the performance of the various products they

Chart 1: Variation of Warranty Practice and Terms within Companies



manufacture. Larger firms, and those with more extensive product lines, are more likely to indicate greater differences among the warranties used for their products. Smaller firms—and those with more monolithic product lines—report greater similarity in the terms and practices of their warranties.

But size of a company's sales may not be the most significant factor dictating whether a firm uses different warranties for its various products. Automobile producers, for example, with substantial sales for each of their major product lines, may use a single warranty. It is likely that other large firms may have more kinds of products for sale, and to more kinds of markets, and it is this consideration that determines whether or not a firm will have diverse warranty terms and practices. Service executives say that as the complexity of a firm's products increases, it is also more likely that its warranty terms and practices will vary.

The respondents also state that the internal organization of a company, particularly the degree of managerial autonomy provided various operating divisions, can also contribute to differences in warranty practices. When no need is perceived for warranties to be uniform, and when various divisions are delegated the responsibility and authority to draft warranties best fitted to their products and services, it is

likely that there will be substantial intracompany variation in warranties.

In some of the companies studied, growth had come largely through acquisitions, so many of such firms' operating divisions had once been independent companies. When these units were acquired, they already had warranties for their particular product lines. The acquiring organization saw no compelling need to modify these terms and conditions to some corporatewide uniform standard. Thus, these firms also exhibit significant variations in warranty terms and practices.

Intraindustry Variations in Industrial Product Warranties

As noted previously, nine out of ten firms surveyed provide formal warranty coverage on their products. For most, this coverage is very similar to that of their competitors.

In general, companies' service executives are well aware of the terms of their competitors' warranties. "The warranty in our industry is a sort of 'price,' " one service executive explains. "The terms and conditions of most of the industry's warranties tend to be somewhat similar, or in the same general range, in the same way that our product prices and conditions of sale are somewhat similar. No one can get very far out of line without losing an important part of market share."

Variation between Domestic and Export Warranty Practices

Nine out of ten of the firms studied sell some of their products in export markets. Three-quarters of these make no significant alterations in the warranty terms and conditions for products sold outside the United States, as compared with those sold in domestic markets (Chart 2.)

The minority of firms, which have different warranty terms and conditions for their export products, cite a number of reasons for this practice. These include:

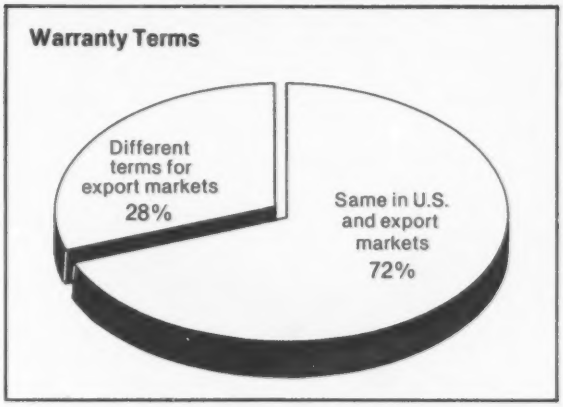
(1) The length of the warranty may depend on the quality and reliability of service and maintenance that is locally available. Company experience may indicate that products sold in the export market do not receive the same care, thus possibly reducing their usable life.

(2) Sale and use of products under varying legal jurisdictions abroad may mandate different kinds of warranty statements. Therefore, a company may feel compelled to protect itself more securely against consequential damages from product failure, and similar liabilities, in some countries than in others.

(3) A manufacturer may have reduced control over—and less information about—the use of its products sold in export markets. This may make it difficult to assess whether or not a product has failed in "normal" use.

(4) Reliance on overseas dealers and distributors for export distribution may make it more difficult for a manufacturer to provide warranty fulfillment than is possible through its domestic distribution channels.

Chart 2: Variation between Warranty Terms for Domestic and Export Products



In general, the warranties for products sold in export markets tend to be of shorter duration and are more likely to provide for replacement of faulty parts (or complete product replacement) as a remedy for a product's failure. Also, buyers of products sold in export markets are less likely to be offered such options as extended warranty coverage, purchased service contracts, and so forth.

Extended-Term Warranties

In some instances, customers may wish to obtain protection that extends the time of the warranty coverage. Nearly a third of the firms surveyed are agreeable to such extensions and make them available at an additional cost (Table 2). In nine out of ten cases, the warranty extension is for an added one-year period.

Extensions of warranty terms take many forms. One possibility is for the manufacturer simply to extend the time span for maximum coverage offered during the warranty period. For example, if it normally pays the cost of both parts and labor for a one-year period, but supplies only parts during the second year, its extended-term warranty might cover parts and labor on faulty products for two full years and cover parts only during a third year. (In other cases, this might work in the reverse, with the parts and labor coverage paid for only during the first year, but parts replacement provided for an additional two years.)

Table 2: Length of Extended Warranty Periods Offered in Various Industry Sectors

		Type of Product Manufactured						
Length of Extended Warranty Period (in months)	*All Companies*	*Business Equipment*	*Electrical Equipment*	*Heating and Refrigeration*	*Machinery Products*	*Scientific Equipment and Controls*	*Mobile Equipment and Components*	*All Other Products*
0 — 12	91%	97%	85%	63%	94%	98%	96%	92%
13 — 24	3	3	11	—	—	2	—	6
25 — 36	2	—	—	7	2	—	2	1
37 — 48	2	—	—	27	—	—	—	—
49 — 60	2	—	4	3	4	—	2	—
Total[1]	100%	100%	100%	100%	100%	100%	100%	100%

[1]Details may not add to total because of rounding.

Chapter 2

Organization of the Warranty Administration Function

SIX manufacturers in ten assign responsibility for warranty administration to their product or technical service functions. One in ten has a separate warranty administration unit (and even then such a unit is apt to be a subunit of the product or technical service function). Most of the remaining companies—over two in ten—locate the warranty responsibility in a customer service department (Chart 3). And as Table 3 shows, the reporting relationships of the warranty function also vary.

The choice of where to position warranty responsibilities in the company structure is dictated by numerous product and marketing factors. Among the primary ones, executives report, are:

(1) The type and number of warranty claims;
(2) The characteristics of the company's distribution system;
(3) The corporate organizational structure;
(4) The importance of warranty-protection issues to purchasers of the kinds of products sold.

If warranty claims tend to be relatively simple (e.g., requiring little in the way of technical investigation and knowledge), or few in number, firms are most likely to give warranty jurisdiction to a customer service or sales unit.

However, if significant technical expertise is required to service warranty claims, companies are more inclined to locate the warranty activities within a product service or technical service function. And if the volume or cost of claims is substantial, the company may create a separate warranty administration unit.

Executives also say that the location of the function can be affected by a company's distribution system, in addition to the nature of the product. If the product is sold directly to end-users, the function is more likely located in a product or technical service department. (In

Chart 3: Company Function Directly Responsible for Administering Warranty Program

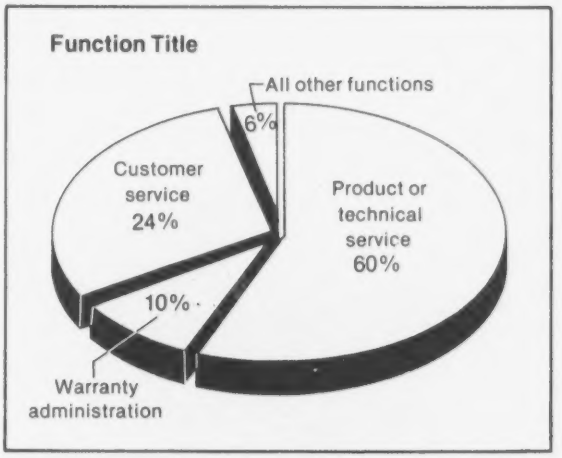


Table 3: Reporting Relationship of Company Function that Administers Warranty Program

Function Reports to Executive in Charge of:	*Companies*	
	Number	*Percent*[1]
Customer Service	34	9%
Parts and service	137	38
Marketing/sales	100	28
General management	78	21
All other	12	3
Total	361	100%

[1]Details do not add to total because of rounding.

these instances, service is nearly always performed by the manufacturer rather than an authorized repair outlet.) But if the product is sold through multiple channels of distribution, warranty responsibilities are more likely to be positioned in the sales or customer service part of the organization.

Reporting Relationship of the Chief Product Service Executive

An executive's reporting relationship often serves as an indicator of how seriously a firm regards a function, as well as the "flavor" that that function should exhibit.

About half of the senior service executives report to the head of the marketing or sales function in their companies (Table 4). One in four of the service executives report to the company president or chief executive officer. But in nearly all firms having the latter reporting relationship, sales are less than $50 million dollars, and the majority are firms with less than $10 million dollars sales.

Table 4: Reporting Relationship of Chief Product Service Executive

Product Service Executive Reports to:	*Companies*	
	Number	*Percent*
Vice president: marketing/sales	190	52%
Company president or chief executive officer	88	24
General manager of operating division	50	14
Vice president: engineering	18	5
Vice president: operations/manufacturing	15	4
Vice president: quality assurance	3	1
Total	364	100%

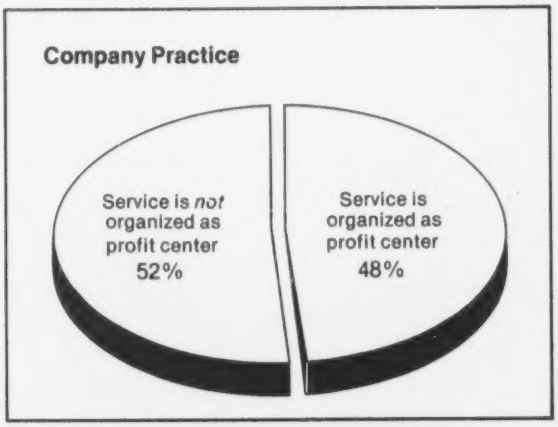
Organizing the Service Function as a Profit Center

It is possible to organize the company's service function as a profit center, crediting it with a "sale" when a customer pays for product service and repairs, and debiting it for the labor and material costs associated with such service and repairs. If customers are not charged for replacement and repairs of parts or products, it is still possible to establish an internal mechanism by which the sales or manufacturing function "pays" a price for service repairs made by the service function.

In about half of the companies studied, product service functions have profit-center status (Chart 4). These firms cite two primary reasons for the practice. First, they say, it provides greater motivation to improve service operations, as well as better yardsticks to measure how efficiently the service department is being managed. Secondly, they say that such an arrangement tends to inhibit the sales function from "giving-away-the-store" in responding to service and repair requests.

Also, manufacturing quality may be stressed

Chart 4: Profit-Center Status of Service Function



in applying the profit-center concept. In one company, for example, the costs of manufacturing products include amounts budgeted for anticipated costs. Each product produced thus contributes specified revenue to the service department's budget. This amount is based on the previous year's costs of service and repair. If manufacturing quality control lapses in one year, the resulting increased costs are added to the next year's cost of manufacture. Management believes this provides a readily visible incentive for manufacturing personnel to maintain close control over product quality.

Many of the companies that have not adopted the profit-center concept for their service functions say their service operations are not large enough to warrant such action. Others, preferring to regard service as an overhead cost, say that they are hard pressed to pinpoint all of the costs associated with their service function—including part-time assistance from other departments.

The Use of Warranty Terms in Product Advertising

Warranty terms and conditions become product attributes that could conceivably be a factor in a customer's purchase decision. Thus, they are capable of being extolled in a company's advertising. A slight majority (57 percent) of reporting manufacturers say, however, that they do not normally describe their products' warranty offerings in either magazine advertising or sales brochures. Reasons given for this include:

(1) As a company's warranty terms and conditions in many cases are not significantly different from those offered by competitors, describing them gives its products no market advantage over those of its competitors.

(2) A company's warranty terms and conditions may be too complex and lengthy to be contained within advertising copy.

(3) Management may regard the terms and conditions as extraneous to the main purpose of the company's advertising.

On the other hand, more than a third of those questioned sometimes cite part, or all, of their warranty terms and conditions in their advertising. Usually, managements in these companies believe that their warranties are superior to those offered by their competitors, or else that prospective customers want confirmation of such warranty coverage as they make their buying decisions. Others are convinced that warranty assurances in advance can reduce potential obstacles to the purchase of their products. Warranty terms are most likely to be included in advertising when the warranty statement itself is relatively brief, easily understood, and readily described in limited space.

Means of Providing Warranties

Transmission of the warranty message to the customer can be accomplished in a variety of ways. It may appear as part of the seller's invoice or on a label attached to a product itself. It may also—or instead—be a part of an instruction manual on product maintenance or use, or contained in promotional materials supplied with the product. Another possibility is to incorporate the message in a separate document specifically intended for this purpose.

About half of the firms surveyed say that their warranties accompany their products, while about three in ten send the warranty message under separate cover. Two in ten use both means (Chart 5).

The nature of the product, including its size, packaging and the way it is distributed, influence the decision as to whether or not the warranty statement is to accompany the product. It is unlikely, for example, that large pieces of equipment, shipped in packing crates, will arrive with the warranty statements enclosed. Smaller items, such as those packaged and sealed at the manufacturer's plant, and perhaps sold through distributors, are likely to have the warranty statements enclosed. Also, relatively simple statements can be most easily made part of the product packaging or labeling.

Chart 5: Means of Providing Warranty Terms to the Buyer

Double Notice

A growing number of companies consider it good marketing practice to provide warranties with the product and under separate cover, as well. The reasons are manifold. First, executives say, warranties that accompany products are sometimes lost or misplaced during the unpacking process. Second, to the extent that the warranty itself establishes a contractual relationship between the buyer and seller, the latter may want to make doubly sure that the document winds up in the purchasing files of the former. The service executives explain, for example, that warranty information may be needed by the puchaser's operating personnel—particularly when responsibilities of the supplier are spelled out in the warranty.

Product Maintenance during the Warranty Period

The companies surveyed are about evenly split as to whether or not specific maintenance must be performed in order for the warranty to remain in force. Slightly more than half of the companies do not require that any product maintenance conditions be met. But the remainder of the companies do require that the product be maintained, according to manufacturers' instructions, in order for the warranty to be valid. These instructions may include provisos governing such practices as:

(1) The protection of the product against certain environmental hazards, for example, abrasive dust, extremes of heat and cold, radiation, vibration, and so forth;
(2) The types and frequency of lubrication of various moving parts;
(3) The periodic replacement of key components known to wear out during the warranty period and whose wear will have an adverse effect on the overall life of the product;
(4) The qualifications—technical proficiency and accreditation—of the personnel performing the maintenance.

Two-thirds of the firms questioned report that they do not require their customers to obtain product maintenance from company-authorized sources (Chart 6). Among firms requiring company-authorized service, managers point out that the nature of their products is such that substantial skill is necessary in the repair and service of the products. They report that their experience is that most customers are incapable of making

Chart 6: Source of Product Maintenance during Warranty Period

these repairs themselves. And they point out that their authorized repair facilities have the special tools and parts needed to make certain that the products are satisfactorily maintained and repaired.

Several of the service executives questioned on this point state that their firms have experimented with the use of "independent" (not company authorized) repair outlets, but the experience has not been satisfactory. A rapid turnover of personnel in such facilities, a lack of commitment to maintaining required tools and parts, and so on, have discouraged these firms from allowing customers either to repair the product themselves or to permit them to be maintained or serviced in unauthorized outlets. Several of the executives say their firms are also experiencing difficulties in obtaining a suitable number of authorized service outlets—facilities that have both the tools and skills necessary to make needed repairs. A few of the companies, after an unsatisfactory experience with independent repair outlets, report they have "taken back" this responsibility.

Chapter 3

Costs of Warranty Service and Repair

AGGREGATE COSTS incurred by a manufacturer in servicing and repairing its products under warranty can range from a fraction of 1 percent to more than 10 percent of the firm's net sales. The amount is partly influenced, among other factors, by the extent to which a company obligates itself under the terms of warranty, as well as the susceptibility of its products to breaking down or having to be replaced (as in the case of faulty batches of chemicals or other materials).

Type of Product Manufactured

By their nature and use, of course, some types of products require more service and repair than do others—for example, complex machinery and equipment, especially when required to perform to very precise tolerances. Significant variations in warranty costs within various product sectors are shown in Table 5. For example, four out of ten manufacturers of scientific equipment and controls have warranty costs exceeding 3 percent of their net sales, whereas only one in twelve mobile equipment and component producers, and only one in eight heating and refrigeration manufacturers, have this same level of warranty costs.

The survey shows that scientific equipment and controls manufacturers do not necessarily have longer or more inclusive warranties. But

Table 5: Warranty Costs in Various Product Sectors

Warranty Servicing Costs as a Percentage of Net Sales	*All Companies*	*Type of Product Manufactured*						
		Business Equipment	*Electrical Equipment*	*Heating and Refrigeration*	*Machinery Products*	*Scientific Equipment and Controls*	*Mobile Equipment and Components*	*All Other Products*
Less than 1.0%	24%	23%	20%	21%	33%	23%	21%	30%
1.0 — 1.9%	37	26	38	41	33	21	54	38
2.0 — 2.9%	20	26	20	24	22	16	17	16
3.0 — 4.9%	11	20	20	10	13	16	2	7
5.0 — 6.9%	4	3	—	3	—	12	2	4
7.0 — 9.9%	4	3	2	—	2	12	4	1
10.0% or more	1	—	—	—	—	—	—	3
Total[1]	100%	100%	100%	100%	100%	100%	100%	100%

[1]Details do not add to total because of rounding.

the nature of these products is such that a greater amount of warranty service and repair seems to be required. This does not reflect on the quality of the products, service managers say, but rather on the fact that more sophisticated standards are set for scientific equipment performance. Also, service managers point out, producers in these fields may have more extensive technical service staffs and facilities. The costs of these staffs and facilities, even when not fully utilized, must be computed in measuring the companies' warranty expenses.

Size of Firm

The smallest firms surveyed, those with less than $10 million annual sales, tend to report lower warranty costs than do larger firms (Table 6). Three out of four of the smaller companies spend less than 2 percent on warranty service and repair, whereas two out of three of the larger firms—those with more than $100 million sales—are able to maintain warranty costs at less than 2 percent.

While the service executives questioned are not certain why larger companies have higher warranty costs, they do offer several theories. They suggest, for example, that the larger company has a greater "product population" and with more customers and products in the marketplace, there is a higher probability that warranty repairs and service will be required. They point out that the total of such repairs and service may be proportionately greater than smaller firms' experience.

Secondly, the service managers believe that larger firms are more inclined to establish formal service functions, that is, to have full-time service technicians and administrators. They say that the existence of such units creates permanent overhead costs which must be reflected in warranty expenses, whether or not products require more service or replacement. Third, they believe that the larger firms, for whatever reasons, may be slightly more liberal in their warranty service and repair policies.

Length of Warranty Period

As shown in Table 7, warranty costs vary according to the length of the warranty. But the data also dispel some "commonplace reasoning." It could be theorized that firms with more lengthy warranties would incur higher warranty expenses. But the data do not confirm that.

Instead, the data show that the firms with some of the shortest warranty periods are also those with the highest costs. For example, one in four firms reporting either three- or six-month warranty time periods, has costs that exceed 3 percent of its net sales, whereas the average for all firms is less than 1 percent.

Table 6: Warranty Costs in Various Size Firms

		Company Net Sales (in millions of dollars)				
Warranty Servicing Costs as a Percent of Net Sales	*All Companies*	*Less than $10*	*$10-24*	*$25-49*	*$50-99*	*$100 or More*
Less than 1.0%	24%	42%	27%	20%	28%	20%
1.0 — 1.9%	37	29	27	38	39	42
2.0 — 2.9%	19	15	16	26	25	16
3.0 — 4.9%	11	7	19	7	7	13
5.0 — 6.9%	3	2	6	7	—	3
7.0 — 9.9%	3	5	6	2	2	4
10.0% or more	—	—	—	2	—	1
Total[1]	100%	100%	100%	100%	100%	100%

[1]Details do not add to total because of rounding.

Table 7: Warranty Costs Compared with Length of Warranty Period

Warranty Servicing Costs as a Percent of Net Sales	All Warranties	Length of Warranty Period (in months) 0-3	4-9	10-12	13-18	19-24	25-36	49-60
Below 1.0%	24%	18%	23%	25%	11%	35%	29%	33%
1.0 — 1.9%	37	45	40	34	67	29	43	33
2.0 — 2.9%	20	13	14	22	22	24	14	—
3.0 — 4.9%	11	18	17	10	—	6	14	33
5.0 — 6.9%	44	3	3	5	—	—	—	—
7.0 — 9.9%	5	5	3	4	—	6	—	—
10.0% or more	1	—	—	1	—	—	—	—
Total[1]	100%	100%	100%	100%	100%	100%	100%	100%

[1]Details do not add to total because of rounding.

Why the firms with shorter term warranties have higher costs is a subject of some conjecture among service managers. They do point out the possibility that many of the products warranted for three- or six-months time spans may be subject to heavy usage, be more prone to mechanical breakdowns, and so forth. The nature of the product may also be a factor.

But there may also be psychological factors at work, a few executives claim. They say that when customers know that they only have three or six months to express their dissatisfaction with a product, they make sure that such claims are filed within these time intervals. One service manager states: "The short duration warranty says to many customers 'This product isn't going to last very long, you had better keep an eye on it and if it does fail, make certain to get your warranty claims filed.' This can become a kind of a self-fulfilling prophesy."

Availability of Service Contracts

Some industrial producers offer service contracts for their products. Typically, these contracts provide that, in exchange for a specified payment by the customer at the time the product is purchased, the manufacturer will perform all repairs and replace all defective parts, at no charge to the customer, *during* the warranty period.

It might be assumed that the revenues obtained from such service contracts would often more than cover the costs. But, as Table 8 shows, the warranty costs of firms that offer such contracts tend to be higher than those of firms that do not. Nearly a third of the former have warranty costs in excess of 3 percent of their net sales—a rate almost double that for all companies surveyed. Again, it is the nature of

Table 8: Warranty Costs and Service Contracts

Warranty Servicing Costs as a Percent of Net Sales	Firms That Offer Service Contracts	Firms That Do Not Offer Service Contracts
Less than 1.0%	16%	33%
1.0 — 1.9%	28	42
2.0 — 2.9%	22	17
3.0 — 4.9%	20	5
5.0 — 6.9%	7	2
7.0 — 9.9%	7	1
10.0% or more.....	—	1
Total[1]	100%	100%

[1]Details may not add to total because of rounding.

the product itself that accounts for most such differences. Companies that offer extended service contracts do so precisely because they sell products with greater potential for breakdowns and thus for greater service, replacement and repair.

In fact, one reason that firms offer service contracts, service executives point out, is that their warranty expenses are already high. The sale of such service contracts helps partly to defray some of these expenses.

Availability of Extended Warranty Coverage

Overall, there does not appear to be significantly greater warranty expense for those firms that do provide extended coverage—usually for a stipulated fee—than for those companies that do not (Table 9).

Table 9: Warranty Costs of Firms Offering Extended Warranty Coverage

	Extended Coverage Availability[1]	
Warranty Servicing Costs as a Percent of Net Sales	*Firms That Do Offer Extended Coverage*	*Firms That Do Not Offer Extended Coverage*
Less than 1.0%	21	27
1.0 — 1.9%	35	37
2.0 — 2.9%	25	17
3.0 — 4.9%	8	13
5.0 — 6.9%	7	2
7.0 — 9.9%	5	3
10.0% or more	—	1
Total[1]	100%	100%

[1]Details may not add to total because of rounding.

A number of service managers point out that companies offering extended warranty coverage usually have a pretty good fix on the costs of such coverage. They design their extended warranty service offerings in such a way that the costs are met by the fees paid. Since the extra expenses and extra revenue cancel each other out, companies offering extended coverage do not either gain or lose as far as warranty expenses are concerned.

The service executives also say that customers do not necessarily exercise such an option if a firm offers extended warranty coverage. A few of the managers say that their companies have been offering such extensions for several years, but that less than one in ten customers takes advantage of such offers.

"Age" of Firms' Warranty Policies and Practices

The companies surveyed were asked whether or not they had substantially modified their warranty policies and practices during the past five years. Those with a "significant change" in their warranties also show significantly lower warranty expenses. This, despite the fact that a majority of the firms that report warranty changes have moved in the direction of liberalizing their warranties.

There may be other factors at work, service managers suggest. One electronics company's service manager says: "It could well be that the companies that have been modifying their warranties in the past half decade are the same ones that keep a close eye on warranty administration. These kinds of companies, exactly because they are warranty sensitive, would tend to have better control over warranty costs and, in fact, lower warranty expenses."

Rationale for Maintaining Warranty Cost Records

Few companies fail to maintain records of their warranty costs. Most companies can compute such costs as a percentage of their dollar sales volume, and track warranty costs for different product classes over time. The primary rationale given by companies for maintaining accurate warranty costs records includes:

(1) The costs of warranty claims must be recovered in product pricing formulas.
(2) Warranty costs are a natural concern in service planning.
(3) Warranty costs provide an indirect way of measuring product performance.

While the average costs for servicing warranty claims for all of the companies surveyed is less than 2 percent of the sale price of a product, even this amount must certainly be of concern. And there are enough instances in which warranty costs may amount to 5 or more percent of the manufacturing cost of the product, an amount that surely has an impact on companies' profit structures. Therefore, companies must not only know the warranty costs of existing products, but must also have a forecast of what the likely warranty costs will be for new products—in order to price them at a level capable of absorbing such costs.

Relatively high warranty costs for a particular product, or line of products, are often synonymous with a high incidence of product failure. In fact, some companies report that they employ warranty costs as an early-warning indicator of repair-prone products. Others find that warranty costs provide a useful guide in comparing the field performance of various products and in identifying those that may need to be trimmed from the line, or substantially redesigned.

Chapter 4
Liability Limits and Disclaimers

UNDER the provisions of the Uniform Commercial Code, warrantors are allowed to exclude or modify warranties, provide for contractual modifications of the warranty, or limit the remedies.[1] And an examination of a large sampling of industrial product warranties reveals that most contain various clauses and language intended to limit the manufacturer's liability or to confine that liability to "express" rather than "implied" conditions of merchantability.

Table 10 indicates the most common limits and disclaimers contained in the warranties studied. Limitations of the last kind mentioned—based on pro-rata use—are, of course, applicable only to certain products that are substantially used up during the warranty period—for example, tires, batteries and similar products.

Limitations on Use

Two-thirds of the companies surveyed seek to limit their liability by specifying that terms of the warranties are conditional on a "normal" use of their products. Such use can be variously defined—in terms of the type or amount of stress or strain placed on the product, end-use applications, and the like.

Makers of machinery, for example, may specify that their products are intended to operate within certain stress limits—measured in pounds, revolutions per minute, minutes of continuous use, and so forth. If it is determined that the buyer, in the course of using a product, has regularly exceeded these limits (e.g., at-

Table 10: Liability Limits and Disclaimers Included in Warranties

Specified Limit or Disclaimer as to Manufacturer's Liability	*Rank Order of Mention*	*Percentage of Firms Having Indicated Limit or Disclaimer*
Liability limited to specified or "normal" use of product.	1	67%
Liability limited to express rather than implied conditions of merchantability . . .	2	51
Liability limited to claims of first-party purchasers	3	47
Liability limited to value of purchased product	4	45
Liabilty limited on basis of pro-rated use of product	5	5

Note: Based on practices of 369 companies reporting on warranty limits and disclaimers.

[1]See Section 2-316 of the Uniform Commercial Code, *Exclusion or Modification of Warranties*, and Section 2-719, *Contractual Modification or Limitation of Remedy*.

tempting to employ a 3,000-pound rated winch to lift a 5,000-pound load), then the warranty is null and void.

The normal-use provisions of a warranty can also govern the kinds of intended product applications for which the manufacturer's liability holds. A product subjected to a hostile, unintended environment—for example, extreme temperatures, excessive dust, and so forth—may no longer be covered by a warranty. This limitation helps to discourage product misuse. For example, a manufacturer of industrial vacuum equipment designed to remove dust and dirt particles may specify that, since the equipment is not a "wet vacuum," any attempt to use it to remove water will void the warranty. Or a producer of woodworking machinery may specify that its equipment is not intended to be used to work metals, plastics or other materials whose construction characteristics can produce excessive wear.

Typical of the language used in describing such limitations on product use are the following:

- ["The company] will remedy any defect which under normal installation discloses such defects."
- "This warranty does not apply to defects not caused by [the company's] equipment (for example, accidents or abuse, work done improperly or contrary to standards), or to equipment on which serial numbers or shipment dates are changed or removed."
- "The above warranties do not apply to destruction or damage resulting from improper installation, alteration, abuse or misuse, accident, fire, flood or Acts of God."
- "This warranty shall be considered void if: The defect in the product is a result of abuse, misuse, fire, flood, storm, or damage in transit, or if operated contrary to instructions contained in the accompanying product operating manual, or a result of improper previous servicing by unauthorized personnel."
- "General exclusions from this warranty shall include any failures caused by competition or racing use, installation of parts or accessories that are not original equipment, abnormal strain, neglect or abuse including lack of proper maintenance, accident or collision damage."
- "Naturally, this warranty does not apply to damage arising from accident, misuse or neglect or from alterations not authorized by [the company]; nor does it cover replacement of normal service items such as tune-up parts and filters."
- "Abuse or neglect in operation, or lack of normal maintenance, voids this warranty. This warranty shall only be effective when such instrument has been examined and found to be defective by an authorized serviceman. This warranty shall be void if such defect is as a result of misuse or abnormal conditions of operations, or has been repaired or replaced by an unauthorized person."
- "It is the responsibility of the user to use reasonable care in maintenance, operation and storage of the product as explained in the owner's manual."

Limitations against Implied Conditions of Merchantability

As noted, Section 2-314 of the Uniform Commercial Code requires all sellers of goods—industrial or commercial—to be bound by a provision that such goods shall be "merchantable" in a contract for their sale, if the seller is a merchant with respect to goods of that kind.

This section of the UCC provides fairly broad discretion for buyers to press claims for loss, damage repairs, or replacement of products that turn out to be of below-average quality; unfit for the ordinary purposes for which they are usually employed; inadequately packaged; and so forth. In order to limit the scope of such claims, companies can, under Section 2-316, limit themselves to express, rather than implied, liabilities. However, such limitations must be "internally consistent" with other language contained in the warranty. In other words, a

company cannot on one hand hold out the product to be "trouble free" and at the same time attempt to limit its liability to express promises.[2]

There are, of course, certain transactions in which the implied condition of merchantability cannot exist. For example, implied warranties are excluded when the contract of sale contains language describing the product "as is" or "with all faults," or with similar limitations which make it clear that the buyers are put on notice that there is no implied warranty.

A similar situation obtains when the contract of sale clearly requires the buyer to examine carefully or sample the goods, so as to identify such defects that an examination of this kind might ordinarily reveal. Implied warranties can also be modified by a course of dealing, or a course of performance, or by the trade usage in a particular economic sector.

Here is typical language from selected warranties:

- "No other warranty, expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose, shall apply."
- "This warranty is expressly in lieu of all other warranties, including, but not limited to, implied warranties of merchantability and fitness, and constitutes the only warranty of company with respect to the product(s)."
- "It is expressly agreed that no warranty of merchantability, nor other warranty, expressed, implied, or statutory, is made by the company, except that the company warrants all products sold by it, and all repairs made by it, to be free from defects in material and workmanship."
- "The foregoing warranty is exclusive and in lieu of all other warranties of merchantability, fitness for purpose, and of any other type, whether expressed or implied."
- "No other express warranty is applicable to this product. The duration of any implied warranties, including the implied warranty of merchantability, is limited to the duration of any implied warranties, including without limitation, any implied warranty of merchantability or fitness for a particular purpose, for a period of one year (90 days if the product is purchased for commercial, institutional, industrial, rental or demonstrator use) from the date of sale."
- "Unless otherwise agreed in writing, this warranty is in lieu of all other warranties (except warranty of title) and states [the company's] entire obligation with respect to defects in new products made or sold by [the company]. There are no implied warranties of merchantability and fitness for a particular purpose."

Limits to First-Party Purchasers

Most manufacturers understandably prefer that their warranties not be applicable to used goods, and nearly half of the warranties studied contain provisos limiting their coverage to items in the hands of the original purchaser. (Distribution channel purchasers, such as dealers and distributors, are not considered "original purchasers.") "If someone buys our equipment," one machine tool firm's service manager explains, "and then resells it within the warranty period (one year), we have some suspicions that the machine received extensive use during the time the first buyer owned it. Such equipment is more susceptible to breakdowns during the warranty period and that's one of the primary reasons we limit warranty coverage to original purchasers."

Few warranties examined define precisely what a "first party" or "original purchaser" is. But one that does states: "The term 'original user purchaser' as used herein shall mean that person, company or organization for whom the equipment is originally installed. This warranty is a service agreement between the user, purchaser, and [the company] for the purpose of

[2]See, for example, the court's ruling in *Whitaker v. Farmhand, Inc.*, 567 P 2 d 916 (Montana 1977), in which an express warranty reservation was held to be an ineffective disclaimer because it conflicted with other language that purported to describe the company's irrigation system as "trouble-free." See also *Wenner v. Gulf Oil Corporation*, 233 UCC Rep. 603 (Minnesota 1978) in which an express warranty of an herbicide was held to be not negated by a Section 2-316 disclaimer.

fulfillment of the express warranty obligations during the term of the warranty. Warranty covers original user purchaser and original equipment components only."

Losses Limited to the Value of the Product

The specter of consequential damages hangs over the sale and warranty of many industrial products.[3] Thus, as many as one-half of the warranties examined seek to limit the manufacturer's liability in case of trouble to the value of its product. The companies issuing them agree to repair or replace defective products, but they do not want to be liable for any other losses that might arise out of their use.

Sometimes, however, such attempts to limit the seller's liability to the value of the product, and thus negate the possibility of consequential damages, have met with resistance in the courts. There are instances where it is patently reasonable for the buyer to seek no greater redress than the value of the product purchased. But there are many others where it is clearly not in the public interest for a manufacturer to be insulated from claims exceeding the product's value, particularly when the producer is fully cognizant of the extent of damage and loss that can result from product failure.[4]

In a "model" disclaimer proposed for a commercial warranty, this hope of limiting liability is expressed as follows:

"Limitation of Liability: The seller shall not under any circumstances be liable for special or consequential damages such as, but not limited to, damage or loss of other property or equipment, loss of profits or revenue, costs of capital, costs of purchased or replacement goods, or claims of customers of the purchaser. The remedies of the purchaser set forth herein are exclusive and the liability of the seller with respect to any contract, or anything done in connection therewith such as the performance or breach thereof, or the manufacture, sale, delivery, resale, installation or use of any goods covered by or furnished under this contract whether arising out of contract, negligence, strict tort or under any warranty, or otherwise, shall not, except as expressly provided herein, *exceed the price of the goods* [emphasis added] upon which such liability is based."[5]

Other phrasings from selected warranties, intended to alert users that sellers will not be held liable for consequential damages resulting from product defects, follow:

- "The remedies set forth herein are exclusive, and the liability of seller with respect to any contract or sale, or anything done in connection therewith, whether in contract, in tort, under any warranty, or otherwise, shall not, except as expressly provided herein, exceed the price of the equipment or part upon which such liability is based."
- "[The company's] responsibility under this warranty is limited to making good at our factory at no cost to the owner, any assembly from the company approved application which shall be returned to us, transportation charges prepaid, within one year or 100,000 miles. With proof thereof date of installation, and which examination shall disclose to our satisfaction to have been defective. Whether or not caused by [the company's] negligence, the company shall not be liable for any indirect, special, consequential, or other damages however caused (including late delivery)."
- "The sole remedy for breach of the foregoing warranty shall be repair or replacement, or in [the company's] sole judgment, a refund of the purchase price paid for such [product] and every other form of

[3]Losses resulting as a "consequence" of using a particular product. Claims for consequential damages can be a thousandfold greater than the value of the product itself. For example, a defective bolt or fastener can result in the destruction of an entire machine; a defective control valve or sensing mechanism might be responsible for the destruction of an entire industrial complex.

[4]"Disclaiming and Limiting Liability for Commercial Damages." 83 *Commercial Law Journal* 8, 1978.

[5]For an application of this clause, see *American Electric Power Company v. Westinghouse Electric Corporation*, 418 F. supp. 435, Southern District of New York, 1976.

liability for direct or consequential damages, cost or loss, is expressly excluded or denied."

- "In no event shall seller be liable for consequential damages, nor shall seller's liability on any claim for any direct, incidental, consequential, or special damages arising out of or connected with the sales contract or manufacture, sale, delivery, or use of the products exceed the purchase price of the goods. [The company] hereby excludes consequential damages for any breach of any express or implied warranty."

Not all states permit manufacturers to exclude or limit incidental or consequential damages or limitations on the length of implied warranties. A few warranties recognize this situation and alert customers to the fact that their rights may possibly extend beyond the language of the warranty itself as far as such limitations are concerned. One such warranty, for example, contains a closing paragraph stating:

"Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, though these limitations or exclusions may not apply to you. This warranty gives you the specific legal rights, and you may also have other (more extensive) rights which vary from state to state."

Potentially Troublesome Phrases

A few manufacturers use words and phrases in their warranties, or in their product advertising, that are deceptive because they mean something less than they promise. Such misrepresentations are cited in the Federal Trade Commission's "Guides Against Deceptive Advertising of Guarantees."[1] Typical statements that can get companies into trouble include:

(1) "Satisfaction or your money back." If the product is sold subject to some time limitations or some specific conditions, these must be included in the same statement that guarantees the return of the buyer's purchase price should the product not prove to be "satisfactory." These limitations need to be clearly and conspicuously disclosed—and sometimes they are not.

(2) "Life" or "lifetime" guarantees. Such terms are intended to be synonymous with the duration of a guarantee, and if they relate to other than the ordinary life of the purchaser—the main product in which a component is installed, and so forth—they should be so described.

(3) "Guaranteed to save you [specified] percent." Open-ended claims for savings can prove disastrous if the manufacturer does not have a good fix on what a customer's current costs are.

(4) "Guaranteed lowest price." A producer may believe that it has the lowest price in a class of products; but if it guarantees this to a prospective buyer, it leaves itself subject to a variety of claims in which the purchaser may allege that similar or like products could be purchased elsewhere at substantially less and demand an adjustment in the purchase price.

While the phrasings just cited are more often associated with consumer goods, their counterparts are not unknown in the warranties or advertising of industrial products.

[1]Federal Trade Commission, "Guides Against Deceptive Advertising of Guarantees," adopted April 26, 1960. Adversary actions against those who engaged in the deceptive advertising of guarantees are brought under the Federal Trade Commission Act (15 USC, Sections 41-58).

Prorated Use Limitations

As noted earlier, certain products by their very nature are used up—partly or even completely—during the warranty period. Manufacturers of such products often try to limit their liability under warranty to the anticipated usable life of the product that should have remained at the time of a warranty claim. Otherwise, for example, the purchaser of a "36-month" battery might demand full replacement value of the battery if it failed 30 months after purchase.

While limitations on prorated use are normally applied in situations where the product is actually "used up," they also occur in some circumstances where an entire unit of equipment or perhaps a portion or component fails after a specified period. For example, a manufacturer of industrial pumps offering a five-year warranty may know, based on operating experience, that the impellor portion of a certain kind of pump will last for four years during normal use. While motor and housing portions of the pump and drive shaft are warranted for five years, with guaranteed full replacement should the product fail during any portion of this time, the impellor may instead be warranted on a prorated use basis—since the manufacturer knows that the impellor will probably have to be replaced during the warranty period.

In effect, this part of the product is used up during the warranty period; and to protect against claims for complete replacement, the manufacturer inserts a prorated usage clause in the warranty.

A variety of formulas are employed to compute the appropriate reimbursement to which a customer is entitled should a prorated product fail during warranty. The simplest kind of formula, of course, is one based on the percentage of the usable life consumed prior to the claim. But not all sellers automatically pay according to such formulas. A few report that in instances where, for example, three-quarters of the life of the product has expired at the time of product failure, they will pay amounts ranging from 10 to 15 percent of the value of the product, rather than the 25 percent value that might otherwise be assumed. Some justify this practice by explaining that they must recover all related costs, including those of processing the warranty claim, compensating the distributor for making replacement, and so forth.

Patent Protection Clauses

A number of the firms studied include "patent protection clauses" in their warranties. Such a clause guarantees that the seller will indemnify the buyer for any expense that may result from a suit by a third party alleging that the buyer's use of the warranted product constitutes an infringement. The issue arises because, in more than a few cases, plaintiffs in patent infringement actions have sued not only the manufacturer of the offending product, but also its users. For this reason, buyers may seek to be held harmless against infringement resulting from the purchase or use of various products.

Patent protection clauses usually provide that the seller shall defend any infringement suits brought against the buyer and that the seller will be responsible for all the damages and costs awarded. Generally, there is an attempt to limit the seller's liability by imposing certain conditions on the buyer. The warranty may stipulate, for example, that the buyer has a positive obligation to notify the seller, in writing, as soon as it is informed by a third party that use of the product in question may constitute patent infringement. The seller usually has a variety of remedies available once such notification is received. Typical of these remedies are:

(1) Obtaining for the buyer a right or license to continue using the seller's product;

(2) Replacing the product with another which is deemed to be equivalent, but which will not infringe on the subject patent;

(3) Modifying the product in such a manner so that it does not infringe on the patent;

(4) Removing the product and refunding the buyer's purchase and freight costs.

What Should Be Included in a Warranty?

Warranties vary greatly in length and construction (see Appendix). But there are certain basic elements that, in the opinion of many executives concerned with warranty issues, should be included in nearly every case. Among these elements, which constitute a potential checklist against which warranty drafts can be measured, are:

(1) *A clear identification of the warrantor.* It is vital that the warrantor provide the firm's full name and address. The address should be that of the company unit concerned with administering the warranty program. If a warranty contains only the name of the parent company and its headquarters city, buyers may have difficulty in tracing the division of the company that made the product and to which inquiries on warranty adjustments should be addressed.

(2) *The specific kind of buyers to whom the warranty is extended.* Some products are warranted only for a particular class of buyers, or to original purchasers only, and so forth. Any such limitations should be stated early in the warranty.

(3) *Specific elements or parts of the product that may be covered by the warranty.* For certain kinds of items, manufacturers may find it logical to be selective in the elements or portions most susceptible to breakdown. For example, a freezer manufacturer might warrant the compressor in a refrigeration unit, but not the unit's housing and doors. In such cases, it is advisable to define specifically the principal components that are covered by the warranty.

(4) *The time duration of the warranty.* There should be a clear expression of the length of the warranty period for the product, and for any elements that might have different warranty intervals.

(5) *What the seller will do under the terms of the warranty.* Obviously, buyers need to know precisely the extent of the seller's responsibilities—for example, whether the seller will pay for complete replacement of the product, parts only, cost of both parts and labor, and so forth.

(6) *What conditions of product use and maintenance by the buyer are necessary for the warranty to be applicable.* Some products require certain maintenance activities in order to remain functionally operative, while others are intended solely for one class of use or application. Provisos and limitations relating to the effect of these on the seller's liability should be spelled out in the warranty.

(7) *The steps the buyer should take to obtain remedy under the warranty.* Manufacturers, executives say, should provide clear descriptions of how a purchaser of their products can file a warranty claim, including information that must be given, where the claim should be made, the identity and location of any authorized repair outlets, and so forth.

(8) *Exceptions and exclusions from terms of the warranty.* When companies seek to limit the liabilities they may incur from product failure during the warranty period (e.g., losses as a result of consequential damages), such disclaimers should be clearly worded and prominently contained within their warranty statements.

(9) *If a seller intends to employ arbitration to resolve warranty disputes, the procedures for such arbitration should also be spelled out.* Where past experience indicates the likelihood of numerous warranty disputes, the company may wish to suggest within the body of the warranty any arbitration procedure—possibly naming a specific body—to resolve such disputes. The existence of such provisions may prevent buyers from going directly to litigation in the event they feel their warranty claims have not been adequately responded to. A listing of such arbitration procedures may also be a limitation in that buyers will be required to pursue such remedies before initiating civil litigation.

Chapter 5

Trends in Warranty Coverages and Conditions

ONE in five firms studied has made what it considers to be significant alterations in its warranty programs during the past half decade. In general, the reported changes in manufacturers' warranties fall into two categories: (1) those liberalizing the terms from the buyer's viewpoint, and (2) those restricting the terms, usually by refining the legal language of the warranty—often to spell out more precisely conditions regarding product use, maintenance, and also, in many cases, to reduce the time period during which the warranty protection is provided (Table 11).

Others cite efforts to improve the speed and equity of warranty claims handling, thus improving the companies' customer relations posture. The manager of customer service for one scientific instrument company reports:

"Our practice has become more liberal and more easily understood. We have also provided free 'loaners' to customers, instituted service seminars for our product users, and reduced the response time necessary to get units repaired or obtain parts. Our warranty statement does include slightly more legal jargon, but we strive for clarity and simplicity."

And the technical services manager of an agricultural equipment producer says: "Our labor rates have been increased and the warranty coverage has been extended overall. Our warranty administration has also become more automated and somewhat more lenient—in response to the pressures of consumerism."

A minority of firms, however, have found a need for tightening their warranties, sometimes reducing the time period during which the warranty is operative, and often redrafting the statement in more precise legal language. These are steps that result in more specificity as far as how the product may be used, under what use conditions, and so forth. The service manager of a tool company refers to this process as "making sure we haven't left any legal back doors open."

Sometimes changes in warranty policy and practice over the past five years reflect not so much an alteration of warranty terms, or of the

Table 11: Single Most Significant Change in Warranty Programs during the Past Five Years[1]

Changes Made	*Percent of Companies Reporting[1]*
Longer warranty, more liberal terms	50%
Greater specificity on coverage and product use	26
Shorter, more easily read warranty statements	10
Better internal controls of warranty claims and settlements	10
Faster claims settlements	5

[1]Among the approximately 20 percent of 369 companies reporting significant changes in their warranty programs during the past five years.

language in which it is drafted but rather, shifts in the company's policies—that is, the way in which it responds to warranty claims and need for adjustments. Several executives state that although their firms' warranties are basically the same as they were five years ago, they believe that customers are now getting a "better deal" from their companies. The manager of customer service for a machinery company says: "Our written warranty has remained basically the same, but our attitudes and practices have become more lenient in regard to 'policy adjustments.' Management has taken on a sense of responsibility beyond that which is contained in the written warranty. As a result, there are more decisions in favor of the customer."

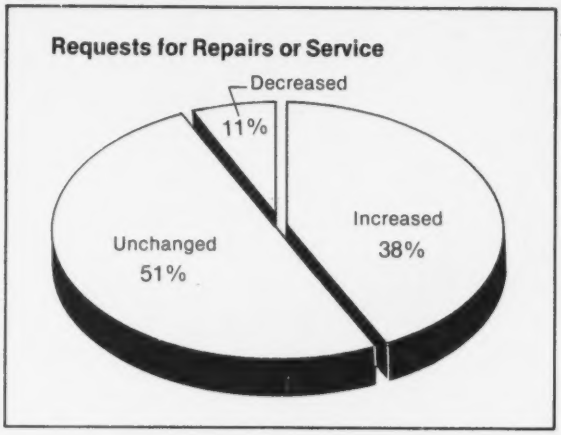
While the warranty terms and conditions in other firms may not have changed, an improvement in customer service may still have taken place as a result of companies monitoring warranty claims more closely. This permits them to pinpoint product failures where better design, fabrication and quality control could modify products in such a manner that they are less likely to produce warranty claims.

Trends in Requests for Warranty Repairs and Service

Managements pay close attention to the volume and types of requests for warranty service. About half of those surveyed reported that during the two previous years there had been no significant change in the number of customers requesting such service (Chart 7). But about four in ten said the number of requests had increased; only one in ten experienced a decrease.

Several factors reportedly account for increased warranty activity. First, many service managers say that their companies' sales have grown appreciably during the past two years. This greater "product population" produces more possibilities for warranty claims. In order of their frequency of mention, other common reasons given for a growing number of warranty claims are:

Chart 7: Trends in Warranty Repairs or Service



(1) Greater customer awareness of warranty rights;

(2) Inflationary pressures creating greater sensitivity to repair costs;

(3) Declines in product quality as well as instances of poor product design;

(4) Inexperienced and unqualified personnel in customer organizations to maintain and service products;

(5) Products are now more complex, service-sensitive;

(6) Increased incidence of product misuse.

Awareness of Warranty Rights

Some service executives say that an increasing number of customers are taking a close look at product warranties and making certain that all their rights are obtained. A few attribute this to the activism of the so-called "consumer movement"—a spillover of consumer rights sensitivity into the industrial product area. Others say that it is principally a matter of customers becoming better educated as to their warranty rights—and even the encouragement of sellers to use these remedies. The service manager for one electronics company states: "We've publicized our warranty coverage, and made it easier to obtain warranty adjustments, so it's no great mystery to me that our customers are making greater use of their warranties."

Inflationary Pressures and More Costly Product Repairs

The inflation of recent years has motivated both consumer and industrial buyers to get the most possible value out of the products and services they purchase. One way of doing this is to make greater use of warranty rights if products do not perform as represented.

Service executives point out that in the past some customers would repair products themselves, rather than wait for the suppliers to do so—even when such repair was covered under a product's warranty. But when repair costs escalated, customers were less willing to absorb such burdens. One service manager, in a metals company, says: "Purchasing agents are making certain that operating personnel make full use of the warranties provided with the products they've bought. They want to be sure to squeeze the last nickel out of every dollar's worth of their budgets." "It may take longer," the service executive in one machinery company points out, "but it's certainly less expensive to have us repair a product than for the customer to rush in and do it himself."

Declines in Product Quality

Some service executives trace an increase in warranty claims to the simple fact that their companies' products are just not as good as they used to be. "Some of these product designs just aren't thought through," one executive explains, "and then we compound the error by rushing the product into the marketplace without adequate testing time. It's a wonder that we don't have more warranty problems."

Poor Maintenance by Customers' Personnel

In the life of many industrial products, rigorous care and maintenance by the customer organization is an absolute prerequisite to satisfactory performance. Equipment may periodically need to be lubricated, calibrated, adjusted, and so forth, in order for it to work correctly. Premature wear and even product failure may occur if suppliers' maintenance instructions are not followed.

According to several service executives surveyed, an increase in their firms' warranty claims can be traced at least partly to poor maintenance of products by inexperienced and unqualified personnel in user organizations. Several, for example, cite relatively high turnover among customers' maintenance personnel. "We find it difficult," one tool manufacturing company executive explains, "to keep retraining our customers' maintenance men. Inevitably, service and maintenance gaps occur, our machines are not taken care of properly, and they fail. These failures can take place during the warranty period and we end up with a greater number of claims."

Complex, Service-Sensitive Products

The mechanic's axiom, "the more things that can go wrong with a product, the more that will go wrong," is endorsed by many of the service executives surveyed, particularly those whose companies manufacture technical products. A number of them point out that current generations of products contain more components, subassemblies, and so forth, than ever before. And these products are often being asked to perform more refined and precise functions.

Unfortunately, complex products are also more prone to go out of adjustment or to break down. When such failures occur during the warranty period, additional service claims are made. In at least some cases, current products are said to be more service-sensitive than before, thus requiring more conscientious maintenance.

Product Misuse

Obviously, how a firm's customers use—or abuse—products can also be a factor in whether or not products fail during the warranty period. A number of executives point to customer misuse as a factor in product breakdowns and subsequent claims. In the case of a producer of industrial machinery, for example, its service manager reports that certain customers are "overloading" their equipment. He explains that the machinery is designed to perform within certain operational standards, but the

company's service engineers find that an increasing number of customers are "trying to get more out of the machines than they are designed for."

Other service managers say that it is not so much a matter of some customers using products for applications wholly inappropriate to their design and manufacture—a situation that sometimes occurs in the consumer goods sector—but rather one of the users trying to make purchased equipment accomplish more than it can logically be expected to. Attempts to hold down costs are sometimes cited in explanation.

Warranty Problems in the Future

In forecasting the warranty problems their companies most likely would have to face during the next several years, service executives cited these most often:

(1) Rapidly escalating costs for labor, material, freight and travel;
(2) State and federal regulation;
(3) Rising customer expectations;
(4) Increased litigation and product liability activity;
(5) Educating customers and dealers regarding product use;
(6) Keeping records of warranty starting dates;
(7) Obtaining, training and holding competent product service personnel.

Problems of Cost

Rapidly increasing costs for such things as labor, freight and travel—and to a lesser extent for materials—are of overriding concern to most service executives and are problems they foresee plaguing future warranty programs. Service labor costs are reportedly rising at a rate exceeding the general price level, and at a time when many customers are demanding more warranty service. Many service managers also point out that in-warranty repairs often take longer to complete than in the past—thus adding to the problem.

For those companies that pay freight charges on products returned to their plants for warranty repair, this portion of the warranty expense has now become an important factor. If service technicians must visit customer plants to make necessary repairs and adjustments, skyrocketing transportation and lodging costs make such visits an expensive proposition.

Some managements are asking their service departments to provide forecasts of warranty expenses, so that these can be fully taken into account in future financial planning.

Increased Government Regulation

Looking ahead, a majority of service managers surveyed predict even greater regulation of both the consumer and industrial goods warranties in the future. They see no substantial diminution, for example, in the efforts of consumerists to increase the after-sale protection afforded purchasers of both industrial and consumer goods.

In addition, service executives' predictions of future warranty problems frequently include the prospect of larger doses of both state and federal regulation—medicine that many say their companies will have difficulty digesting. There is particular concern over legislative activity at the state level. As individual states create laws affecting warranty programs—for example, regarding the operation and dispersion of licensed service and repair centers, the number of years that parts must be kept in stock, and so forth—warranty administrators see their lives becoming more complicated.

Rising Expectations of Customers

The buyers of their companies' products in the future, many service executives say, will want even more warranty protection than today's generation. As one executive states: "Customers' expectations of reliability and performance are advancing far faster than our technology."

Among others, the chief service executive of an instruments company is especially concerned over the future proliferation of customers who

regard all failures that occur during the warranty period (regardless of reason or fault) as "warrantable failures"—that is, defects for which the company must be held responsible.

In a few cases, this dilemma is at least in part traceable to sellers' own marketing efforts. According to a machinery company spokesman, for example: "We've been telling customers for several years now how technically advanced our products are, and how reliable they are, and we've done a good job of convincing them of just that. The problem is that the products really are not that trouble-free. But we've built up our customers' expectations and now we have to deliver on those promises."

Increased Litigation and Product Liability

A number of survey respondents believe that the attorneys and service executives in many manufacturing firms are likely to see a great deal more of each other during the next decade. They expect their firms to be the target of an increasing number of lawsuits seeking to affix blame for product failures and to recover consequential damages resulting from them. Several service executives predict an increase in out-of-court settlements, believing that their companies will attempt to defuse and limit liability litigation through such settlements.

Underlying these predictions, in some instances, is a view that there has been a substantial expansion of the doctrine of implied warranty in recent years and that this will probably precipitate an increase in litigation. Another view is that the courts are increasingly inclined to hold manufacturers at fault for product defects, thus encouraging customers to file suit.

Dealer and Customer Education

Often, getting the purchaser of technical products to read and understand instructions on their care and use is a difficult task for the manufacturer. But many warranty problems could be short stopped, service executives believe, if their companies were to spend more effort on instructing both distributors and customers in these matters.

In some instances, this problem is aggravated by the fact that dealers and distributors, who should be helping to educate customers on how best to use products, do not do their jobs. Some manufacturers complain that the dealers do not even familiarize themselves with product-use instructions. In the future, companies may experience even more difficulty in getting trained and loyal distributors, service managers believe. And as some distributors begin to represent more and more companies, this situation is likely to grow in gravity.

Recordkeeping Problems

Warranty administration already requires a substantial degree of recordkeeping, to verify claims for warranty service, and also to monitor authorized repairs, possible recalls, and so forth—both domestically and overseas. Service units must also be able to confirm that the "timekeeping" on the company's "warranty clocks" is accurate—that the time date when the warranty period began is the same date as that claimed by the customer.

In the future, service executives expect to face even greater information and clerical loads in order to respond to warranty claims and control warranty costs, and meet the requirements of legislation. At present, many say they do not have the necessary record systems or personnel to keep such records.

Competent Product Service Personnel

"Our own service personnel," says one instrument company executive, "are just not able to keep up with our product designers. Product complexity is increasing faster than our ability to diagnose and correct product failures." Other service managers similarly complain of being shorthanded—often with no immediate relief in sight. "It's virtually impossible to hire an experienced repairman," a refrigeration company executive says. "Our own service personnel are often recruited away by smaller firms after we've spent years training them."

Some firms are now committing more time to the recruiting and training of service personnel.

Other Problems

Among other things, warranty administrators see their companies' programs as likely to be adversely affected by such additional factors as increased foreign competition, a greater incidence of warranty fraud, and more rapid product obsolescence.

Some managers hold that their firms are sometimes forced to compete against the lower prices of foreign producers who have poor or nonexistent warranty programs. "Certainly, some of our foreign competitors' products have warranties," says one machinery company executive, "but did you ever try to find one of their authorized repair outlets, or get one of their products fixed?"

Also, white-collar crime has entered the warranty field—in both the consumer and industrial goods sectors. Fraudulent claims, occasionally involving collusion by repair outlets (that charge manufacturers for repairs not made) are disturbing to service executives who fear the future may bring more of this kind of activity.

Appendix

Warranty Exhibits

The warranties shown in the pages that follow have been selected from the several hundred examined during the course of this study. They illustrate the approaches that various companies have chosen to take in describing the warranty protection offered for their products. Some are more detailed than others, often reflecting the differences in the nature of products, service requirements, and company policies of the manufacturers.

ITT Terryphone Corporation—This warranty seeks to limit the extent of damages that might result from product failure by asking the buyer to immediately notify the warrantor in the event of damage. It gives the manufacturer the option to repair the defective item in place, or to have it returned to the factory for adjustment. The warranty also calls attention to the fact that ITT will not be held responsible for equipment that fails through improper use, or that may have been used (i.e., for which there is no supporting data proving that the product was sold directly to the customer claiming warranty damage).

* * * *

WARRANTY

TERRYPHONE SYSTEMS

LIMITED WARRANTY

ITT Terryphone Corporation warrants that for a period of one year from the date of its shipment, or when applicable, the date of testing or installation [ninety (90) days on lamps, no warranties on fuses], the equipment sold shall be free from defects in workmanship and materials and shall conform to the contract's and/or ITT Terryphone's specifications. If a defect occurs within the warranty period, buyer shall notify ITT Terryphone immediately and ITT Terryphone's sole responsibility shall be, at its option, to either repair or replace the defective item in place or upon its return to ITT Terryphone's plant in Harrisburg, Pennsylvania, shipping charges prepaid by the buyer. Replacements made by ITT Terryphone under this warranty shall be shipped prepaid. Items furnished by other vendors and not incorporated into the equipment sold by ITT Terryphone shall only have the vendor's warranty, which shall be passed on to the buyer.

This warranty does not apply to defects not caused by ITT Terryphone (for example, accidents or abuse; work done improperly or contrary to ITT Terryphone's standards), or to equipment on which serial numbers, manufacture or shipment dates are changed or removed.

NO OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY.

LIMIT OF LIABILITY: ITT TERRYPHONE SHALL NOT HAVE ANY LIABILITY OF ANY KIND UNDER THIS WARRANTY UNLESS BUYER GIVES ITT TERRYPHONE NOTICE OF ITS CLAIM WITHIN THIRTY (30) DAYS AFTER THE DATE BUYER KNOWS OR SHOULD KNOW OF ITS CLAIM, AND FILES SUIT AGAINST ITT TERRYPHONE WITHIN ONE (1) YEAR AFTER SUCH DATE.

WHETHER OR NOT CAUSED BY ITT TERRYPHONE's NEGLIGENCE, ITT TERRYPHONE SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES HOWEVER CAUSED (INCLUDING LATE DELIVERY). ITT TERRYPHONE's OBLIGATION TO REPAIR OR REPLACE IN ACCORDANCE HEREWITH SHALL BE BUYER's EXCLUSIVE REMEDY FOR BREACH OF ANY WARRANTY OR FOR NEGLIGENCE IF ITT TERRYPHONE FAILS TO REPAIR OR REPLACE AS AFORESAID. UNLESS CONTRARY TO STATE LAW, ITT TERRYPHONE's LIABILITY SHALL NOT EXCEED THE CONTRACT PRICE FOR THE EQUIPMENT CLAIMED TO BE DEFECTIVE OR UNSUITABLE.

ITT TERRYPHONE CORPORATION

300 East Park Drive, Harrisburg, PA 17111

Micromedic Systems (a division of Rohm & Haas Company)—This warranty is contained within the conditions-of-sale notification on the back of the company's invoice. (The manufacturer is not identified anywhere in the conditions-of-sale description, but simply referred to as the "seller.")

* * * *

5. WARRANTY

Seller warrants the reagents sold by it to be of merchantable quality at the time of shipment. There is no warranty, express or implied, as to the fitness of these materials for any particular purpose. Buyer must notify the Seller of any breach of warranty, in writing, within 15 days after receipt of the order. All claims shall be deemed waived in the event Buyer fails to notify Seller within the guarantee period.

In the case of equipment, and subject to the exceptions and upon the conditions specified below, Seller agrees to correct, either by repair, or, at its election, by replacement, any defects of material or workmanship which develop within one year after delivery of the apparatus to the original purchaser by Seller or by an authorized representative, provided that investigation and factory inspection by Seller discloses that such defect developed under normal and proper use. The time limit of this warranty is one year from the date of shipment of a new apparatus and three months from date of shipment of a repaired apparatus.

The exceptions and conditions mentioned above are the following:

A. Some components and accessories by their nature are not intended to, and will not, function one year. If any such components or accessory manufactured by Seller and part of the item sold fails to give reasonable service for a reasonable period of time, Seller will, at its election, replace or repair such component or accessory. What constitutes reasonable service and what constitutes a reasonable period of time shall be determined solely by Seller.

B. Seller makes no warranty concerning components or accessories not manufactured by it. However, in the event of the failure of any component or accessory not manufactured by Seller, Seller will give reasonable assistance to the Buyer in obtaining from the respective manufacturer whatever adjustment is reasonable in the light of the manufacturer's own warranty.

C. Seller shall be released from all obligations under its warranty in the event repairs or modifications are made by persons other than its own authorized service personnel unless such repairs by others are made with the written consent of Seller.

Except as stated above, Seller makes no warranty and shall have no liability under any warranty, express or implied (either in fact or by operation of law), statutory or otherwise. Representations and warranties made by any person, including dealers and representatives of Seller, which are inconsistent or in conflict with the terms of this warranty (including but not limited to the limitations of the liability of Seller as set forth above), shall not be binding upon Seller unless reduced to writing and approved by an officer of the Seller.

The Lodge & Shipley Company—This warranty is provided to the prospective customer in advance of an actual purchase. It accompanies all quotations for work, and is contained as part of the "conditions governing all quotations."

* * * *

THE LODGE & SHIPLEY COMPANY

3055 Colerain Avenue
CINCINNATI, OHIO 45225, U. S. A.

CONDITIONS GOVERNING ALL QUOTATIONS - Concluded

5. WARRANTY:

"IT IS EXPRESSLY AGREED THAT NO WARRANTY OF MERCHANTABILITY, NOR OTHER WARRANTY, EXPRESS, IMPLIED, OR STATUTORY IS MADE BY THE COMPANY EXCEPT THAT THE COMPANY WARRANTS ALL PRODUCTS SOLD BY IT AND ALL REPAIRS MADE BY IT TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP."

The Company's liability shall be limited to repairing or replacing f.o.b. its factory any part sold or repaired by it which shall, within one year after delivery in case of equipment sold, and within three months after completion of repairs, be returned to it by the Purchaser, shipment prepaid, and which the Company's examination shall disclose to have been thus defective. With respect to equipment and accessories furnished by third parties, the Company's liability shall be only to the extent of the liability of the original manufacturer to the Company. The provisions provided immediately above in the foregoing two sentences of this subparagraph are expressly agreed by the Purchaser to constitute Purchaser's sole and exclusive remedy whether in contract, tort, or otherwise, and shall be binding on Purchaser and all other persons.

Purchaser understands and agrees that no agent is authorized to vary or extend the terms of this agreement except in a writing signed by an authorized officer of Company at the home office in Cincinnati, Ohio.

6. CANCELLATION:

A request to cancel all or any part of an order

(a) Will be withdrawn if the order is then within 30 days of completion, but otherwise,

(b) Will be accepted by us, all work stopped as promptly as reasonably possible and the resulting cancellation charge, rendered in lieu of liquidated damages, will be computed on the basis of our full cost plus normal profit covering all engineering work, all work in process, all raw materials, all supplies and all commitments made by us in connection with the order, less such allowances as we may be in position to make for any standard components and for the balance of the material as scrap.

7. PAYMENT TERMS:

Are net 30 days from date of invoice subject to credit approval at time of acceptance of order unless otherwise stated in quotation.

8. ACCEPTANCE OF ORDERS:

Orders based on this quotation are subject to acceptance only at the office of The Lodge & Shipley Company, Cincinnati, Ohio.

9. TITLE:

Delivery of equipment to a carrier by us, consigned to purchaser or otherwise as the purchaser may direct, shall constitute transfer of title, ownership, possession and property in and to the equipment at such point of delivery, and such carrier shall thereafter be deemed to be acting for the purchaser and the equipment shall thereafter be at the purchaser's risk.

10. SERVICE:

Free demonstration service is only furnished for machines delivered in the U.S.A. and Canada, and only when special equipment is furnished to a purchaser. Such free service will be limited to a reasonable length of time based on our past experience.

For demonstration service on standard machines and equipment, as well as additional service beyond initial demonstration of special equipment, a charge will be made at the applicable rate per day, plus all traveling expenses with per diem rate for daytime traveling.

Snap-On Tools Corporation—This firm uses essentially the same warranty for products sold to industrial buyers and consumers. The simply worded warranty is contained on the back of a "record of purchase and warranty" executed at the time the product is sold. The manufacturer does not refer to this as a "registration" of the warranty since the law does not require that warranties be "registered" with sellers.

• • • •

Snap-on® LIMITED WARRANTY

This unit has been carefully checked and tested prior to leaving the factory, and to the best of our knowledge, is free from defects in workmanship and material. We will replace or repair, after inspection, at our cost, all parts found to be defective in material and workmanship for a period of *90 days from date of purchase* indicated on reverse side. The unit must be returned to a dealer or branch office of **Snap-on Tools Corporation** within the warranty period.

The customer is required to prepay all transportation charges connected with the repair under this warranty agreement. This warranty is null and void if customer or any other person other than an authorized employee of **Snap-on Tools Corporation** has made any attempt to repair or alter this unit prior to reporting said defect to a dealer or authorized branch employee.

PURCHASER — KEEP THIS CARD!

It must be presented to dealer for repairs under warranty.

SC78C

RECORD OF PURCHASE AND WARRANTY

NAME OF PURCHASER_____
(print name carefully)

STREET ADDRESS_____

CITY_____ **STATE**_____ **ZIP**_____

SNAP-ON TOOLS CORPORATION
General Offices
KENOSHA, WISCONSIN 53140 U.S.A.

Type of Unit_____

Model No._____ **Serial No.**_____

CERTIFICATE OF ACCURACY

We certify that this torque wrench has been calibrated to be accurate within 4% in the right-hand direction and 6% in the left-hand direction of the indicated reading. Any correspondence regarding this unit must refer to the model, serial and order ticket numbers on this card.

Snap-on **Order Book Ticket No.**_____ **Date**_____

Salesman_____ **Branch**_____
(signature)

Dealer Who Delivers This Unit Must Fill In & Sign Card

Federal Signal Corporation—A proviso in this warranty statement makes the warranty conditional on the ability of the manufacturer to inspect the product at any time that it may designate. It seeks thereby to ensure that its warning sirens are correctly installed and maintained. Product characteristics also enter into the commitment. With the manufacturer specifically absenting itself from liability for transportation, removal and reinstallation costs—which could be significant—for the outdoor warning sirens.

• • • •

Warranty

Federal Signal Corporation (Federal) warrants outdoor warning sirens of its manufacture to be free from defective material and workmanship at the time of delivery to the user. Federal will repair or replace, without charge to user other than transportation, removal and reinstallation costs, any of its outdoor warning sirens and controls, or part thereof which Federal shall determine, in its sole discretion, to be defective in material or workmanship provided written notice of such defect shall have been given to Federal within one year from the date of delivery as to such defects in electrical components, such as motors and controls, and within three years from date of delivery as to all other such defects, such as mechanical components. Additionally, Federal's obligations hereunder shall be conditioned upon the user, at its cost, making the outdoor warning siren available to Federal for its inspection at such location as Federal may designate. This warranty shall not extend to any outdoor warning siren which has been improperly installed or inadequately maintained according to instructions supplied by Federal or which has been subjected to misuse, negligence, accident, tampering or alteration. The sole remedy for breach of the foregoing warranty shall be repair or replacement as aforesaid, or in Federal's sole judgment, refund of the purchase price paid for such outdoor warning siren, and every other form of liability for direct or consequential damages, cost or loss is expressly excluded or denied. THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES OF MERCHANTABILITY, FITNESS FOR PURPOSE AND OF ANY OTHER TYPE, WHETHER EXPRESS OR IMPLIED.

FEDERAL SIGNAL CORPORATION

Kato Engineering Company—The warrantor in this instance is concerned that products might be returned without prior consent, or that users might authorize third parties to make repairs of Kato products and then forward the invoices for such repairs to the warrantor. It seeks to avoid both such possibilities by specific clauses that prohibit such activity.

* * * *

WARRANTY

Kato Engineering Company warrants that the apparatus manufactured by us will deliver its rated output, providing such apparatus is properly installed, properly cared for, and properly operated under normal environmental conditions.

Standard products manufactured by Kato Engineering Company are warranted to be free from defects in workmanship and material for a period of one year from the date of shipment, and any products which are defective in workmanship or material will be repaired or replaced at the option of Kato Engineering Company. Final determination as to whether a product is actually defective rests with Kato Engineering Company. The obligation of Kato Engineering Company hereunder shall be limited solely to repair and replacement at its factory, of products that fall within the foregoing limitations, and shall be conditioned upon receipt by Kato Engineering Company of written notice within the warranty period of any alleged defects or deficiency. No products shall be returned to Kato Engineering Company without its prior consent. In no case can Kato Engineering Company accept shipping charges incurred either through return of defective items to its factory or return of repaired or replacement item to the user. Kato Engineering Company cannot assume responsibility or accept invoices for unauthorized repairs to its components, even though defective. In the case of components, parts, or units purchased by Kato Engineering Company, the obligation of Kato Engineering Company shall not exceed the settlement that it is able to obtain from the supplier thereof.

The life of the products of Kato Engineering Company depends to a large extent upon type of usage thereof, and Kato Engineering Company makes no warranty as to period of service nor as to fitness of its product for specific applications by the buyer unless Kato Engineering Company specifically agrees to otherwise in writing after the proposed usage has been made known to it. In no event will Kato Engineering Company be liable for consequential or incidental damages or for any expense incurred by Buyer due to use or sale of products sold by Kato Engineering Company.

The foregoing warranty is exclusive and in lieu of all other warranties expressed or implied, including but not limited to any warranty of merchantability or of fitness for a particular purpose.

This Warranty does not apply to experimental or developmental products.

KATO ENGINEERING COMPANY
Mankato, Minnesota

KeepRite Products Limited—This statement describes not only the initial warranty, but also an extended four-year warranty for specific parts of the cooling assembly. The extended warranty applies to parts only, while the original warranty is more inclusive.

* * * *

KeepRite PRODUCTS LIMITED

AIR COOLED CONDENSING UNIT WARRANTY CONTRACT

ONE YEAR WARRANTY

KeepRite Products Limited warrants to the original purchaser and the first end user of each new Air Cooled Condensing Unit that any part thereof which proves to be defective in material or factory workmanship within one year from date of original installation or 15 months from date of shipment from the factory, whichever date may first occur, will be repaired or replaced F.O.B. Brantford, Ontario, free of charge. Any defective part to be repaired or replaced must be returned to KeepRite, transportation charges prepaid, must be properly packaged and tagged and must be accompanied by information indicating the serial number and model number of the Air Cooled Condensing Unit from which it was removed. In case of a compressor failure, the compressor serial number must also be indicated.

Motors, controls, fans, etc., not manufactured by KeepRite, but furnished as a part of a KeepRite product will carry the warranty of the original manufacturer. Liability for refrigerant loss, labour charges, or for damages, delays or losses consequential or otherwise, cannot be assumed by KeepRite.

This warranty does not apply to any part of an Air Cooled Condensing Unit on which the serial number has been altered or removed.

ADDITIONAL FOUR YEAR WARRANTY

In addition to the one year warranty on each new Air Cooled Condensing Unit, KeepRite warrants to the original purchaser and the first end user for a period of four years next following the expiration of the one year warranty, the repair or replacement of the motor-compressor assembly or any defective parts thereof, if it is shown to the satisfaction of KeepRite that the motor-compressor assembly is inoperative due to defects in material or factory workmanship as originally supplied and that normal use and reasonable care have been exercised. The term "motor-compressor assembly" refers to the pressure imposing mechanism consisting of the stator, rotor, compressor and the housing in which these parts are enclosed.

Controls, fan motor, condensers, receivers, or other components are not included in this extended warranty.

GENERAL TERMS AND CONDITIONS APPLYING TO BOTH WARRANTIES

KeepRite does not, however, assume any responsibility for any expenses, including labour, or refrigerant loss, incurred in the field incidental to the repair or replacement of any part or parts covered by the above warranties.

The above warranties do not apply to destruction or damage resulting from improper installation, alteration, abuse or misuse, accident, fire, flood or Acts of God. The decision of KeepRite Service Department after a thorough examination as to whether a defect is within the terms of the above warranties shall be final.

The foregoing warranties are in lieu of all other warranties, expressed or implied, and KeepRite neither assumes nor authorizes any person to assume for KeepRite any other obligation or liability in connection with the Air Cooled Condensing Unit covered by this warranty certificate.

Condensing Unit Model No.

Condensing Unit Serial No.

Compressor Serial No. (1)

Compressor Serial No. (3)

Compressor Serial No. (2)

Compressor Serial No. (4)

WARRANTY CERTIFICATE IS THE PROPERTY OF THE OWNER OR END USER AND SHOULD BE FORWARDED TO HIM IMMEDIATEY.

KeepRite PRODUCTS LIMITED
Brantford, Ontario

Clark Equipment Company, Industrial Truck Division—While this warranty applies to industrial equipment, its wording and format are much like those of a consumer products' warranty.

* * * *

Owner Protection Warranty

When you buy or lease a new Clark industrial lift truck, tow tractor, carrier, motorized hand truck or attachment from Clark or an authorized Clark dealer, Clark warrants that the dealer that sold or leased the product or a local Clark dealer will, without charge, provide you with the materials and the labor to replace or repair any part furnished by Clark found to be defective in material or workmanship within 6 months after the product is delivered to you or 1,000 hours of use, whichever occurs first.

Thereafter, the Clark dealer will, without charge, provide you with a new or repaired part to replace any part furnished by Clark in the major components identified below found to be defective within one year after the product is delivered to you, or 2,000 hours of use, whichever occurs first.

The following are the major components covered:

1. In internal combustion industrial trucks
   a) Engine (excluding all accessories)
   b) Transmission (excluding parking brake)
   c) Drive axle (excluding brake assemblies);
2. In electric industrial trucks
   a) All electric motors (excluding brushes)
   b) Solid state control panel components
   c) Contactor panels (excluding contactor tips)
   d) Drive axle (excluding brake assemblies).

Clark simply requires that the product receive normal use and proper maintenance; that you give Clark or a Clark dealer reasonable notice of the defect; and that you permit the dealer to return defective parts to Clark.

Naturally, this warranty does not apply to damage arising from accident, misuse or neglect or from alterations not authorized by Clark; nor does it cover replacement of normal service items such as tune-up parts and filters.

This warranty does not apply to batteries (other than Clark brand), battery chargers, attachments that Clark does not make, and tires. These products are covered instead by the existing warranties, if any, of the manufacturers of the product.

CLARK

Unless Clark otherwise agrees in writing, this warranty is in lieu of all other warranties (except the warranty of title) and states Clark's entire obligation with respect to defects in new products made or sold by Clark. There are no implied warranties of merchantability and fitness for a particular purpose. In no event shall Clark be liable for incidental, special or consequential damages.

As used in this warranty "Clark" means Clark Equipment Company, Industrial Truck Division, for products sold or leased in the United States, or its subsidiary, Clark Equipment of Canada Ltd., for products sold or leased in Canada.

Machine Serial Number

Company

Installed at (city, state)

Date Installed

Delivering Dealer

The Trane Company—Warranty obligations and product liability are sometimes combined, as in this statement embodied in the terms-and-conditions-of-sale section on the reverse side of the warrantor's invoice. This warranty reserves liability for products until they "have been paid for." (In some breach-of-warranty litigation, warrantors have been held responsible even though the companies have not received payment for the defective product.)

* * * *

WARRANTY AND LIABILITY

The Company warrants for a period of one year from date of shipment that the Company products covered by this order (1) are free from defects in material and workmanship and (2) have the capacities and ratings set forth in the Company's catalogs and bulletins; provided, that no warranty is made against corrosion or deterioration, or with respect to suitability of substitute materials used because of government regulations. The Company's obligations and liabilities under this warranty are limited to furnishing f.o.b. factory or warehouse at Company designated shipping point, freight allowed to Buyer's city (or port of export for shipments outside the conterminous United States) replacement equipment (or at the option of the Company parts therefor) for all Company products not conforming to this warranty and which have been returned to the manufacturer. In no event shall the Company be obligated to pay for the cost of lost refrigerant. No liability whatever shall attach to the Company until said products have been paid for and then said liability shall be limited to the purchase price of the equipment shown to be defective. Any further warranty must be in writing, signed by an officer of the Company. The Company makes no warranty whatever with respect to motors, switches and controls, inasmuch as they are warranted separately by their manufacturers.

THE WARRANTY AND LIABILITY SET FORTH IN THE PRIOR PARAGRAPH ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, WHETHER IN CONTRACT OR IN NEGLIGENCE, EXPRESS OR IMPLIED, IN LAW OR IN FACT, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR USE. IN NO EVENT SHALL THE COMPANY BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

GAF Corporation—This simple warranty, covering fluorescent lamp reproduction equipment, emphasizes the firm's liability limits and disclaimers.

FLUORESCENT DIAZO EQUIPMENT WARRANTY **PART 1**
(APPLICABLE IN CONTIGUOUS U.S.A. ONLY)

GAF® Fluorescent Lamp Diazoprinters are warranted to be free from manufacturing defects for six months from date of installation or one year from date of shipment, whichever expires first. During the first three months of the warranty period, defective parts will be replaced without charge for labor. During the remaining warranty period, GAF will replace only the defective parts. This warranty is not applicable to machines which have been altered or repaired by unauthorized sources, or have been subject to neglect, abuse, misuse, or accident (including shipping damages).

THE ABOVE WARRANTY IS EXCLUSIVE AND REPLACES ALL OTHER WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. GAF WILL NOT BE LIABLE FOR ANY OTHER DAMAGES OR LOSS, INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES FROM WHATEVER CAUSE, INCLUDING BREACH OF WARRANTY OR NEGLIGENCE.

Economy Engineering Company—This brief warranty statement—covering the major liability elements—appears as part of a warranty registration form for the firm's mechanical work platforms.

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WARRANTY

Every Economy 1000 or 1200 Scissors Work Platform is thoroughly tested prior to shipment and is guaranteed to be free of defects in material and workmanship. For a period of 180 days after delivery any defective parts will be replaced or repaired by your local authorized Economy distributor without charge. Abuse or neglect in operation, or lack of normal maintenance voids this warranty. Parts other than of our own manufacture are subject to the original manufactures warranty.

Any claim under this warranty must be filed in writing to Economy Engineering Company 484 Thomas Dr., Box 1507 Bensenville, Illinois 60106.

NOTE: Warranty may be void unless this card is completed and returned within 30 days from receipt of shipment.

PRINTED IN U.S.A

WARRANTY REGISTRATION

Customer Name_____

Address_____

City and State_____

Purchased from_____
(Distributor)

Date Received_____

Date of Registration_____

Model No._____

Serial No._____

PLEASE COMPLETE ALL INFORMATION
AND MAIL IMMEDIATELY

Bastian Blessing Food Service Equipment Company, Inc.—This warranty, for food service equipment, first notifies the buyer that the warranty is a limited one, covering "parts with limit on service labor." It also describes the availability and terms of an additional four-year protection on the motor-compressor portion of the equipment.

* * * *

Bastian Blessing Food Service Equipment Company

LIMITED WARRANTY

(Parts With Limit on Service Labor)

DISCLAIMER OF IMPLIED WARRANTIES — LIMITATION OF LIABILITY

1. **THIS WARRANTY IS IN LIEU OF ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR PURPOSE, OR OTHER WARRANTIES, EXPRESS OR IMPLIED. Correction of nonconformities, in the manner and for the period of time provided above, shall constitute fulfillment of all liabilities of seller to buyer, whether based on contract, negligence or otherwise with respect to, or arising out of such equipment. Seller's obligation under this warranty shall not include any transportation charges or costs of installation or any liability for direct, indirect, or consequential damages or delay. The remedies set forth herein are exclusive, and the liability of seller with respect to any contract or sale or anything done in connection therewith, whether in contract, in tort, under any warranty, or otherwise, shall not, except as expressly provided herein, exceed the price of the equipment or part on which such liability is based. Any improper use, operation beyond capacity, substitution of parts not approved by seller, or any alteration or repair by others in such manner as in seller's judgment affects the product materially and adversely shall void this warranty.**

FIRST YEAR PARTS

2. The parts on Bastian Blessing Food Service Equipment with the exception of the refrigeration motor-compressor are warranted by the Bastian Blessing Food Service Equipment Company ("Bastian Blessing") to the original user purchaser to be free from defects in workmanship and material for a period of one (1) year from the date of original installation. Should any part(s) prove defective in normal use, Bastian Blessing will, at its option, replace it (them) or will provide the parts to repair it (them) without cost or with limited cost for labor as explained below and your cost for returning defective part(s) to Bastian Blessing.

ADDITIONAL FOUR-YEAR PROTECTION PLAN

3. In addition to the above one-year limited warranty on the complete product, Bastian Blessing agrees to warrant to the original user purchaser the replacement of the sealed motor-compressor. Said part to be replaced with similar part at any time during the four (4) years following the one-year full warranty period, if it is shown to the satisfaction of Bastian Blessing that the sealed motor-compressor is not operative due to defect in factory workmanship or material as originally applied and that normal use and reasonable care has been exercised.

   The additional four- (4) year motor-compressor protection plan does not include service labor or apply to cabinet components, temperature control, valves, driers, motor starting equipment, condenser, or any other part that is not part of the sealed motor-compressor.

   The motor-compressor replacement should be obtained from the nearest Authorized Refrigeration Wholesaler. To obtain warranty reimbursement, send the invoice from the Authorized Refrigeration Wholesaler to Bastian Blessing with the equipment model number, serial number, installation date and replacement date. Reimbursement will be made direct to the user purchaser.

SERVICE LABOR

4. Bastian Blessing will pay service labor charges up to three man-hours at prevailing straight time rates to repair defects in the equipment during the first thirty (30) days equipment is in operation. Additional service labor is covered only when specifically authorized by Bastian Blessing.

   When repair time is anticipated to exceed three straight time hours, Bastian Blessing reserves the right to authorize additional time or send factory representative.

   Warranty service labor coverage applies only to initial service call to repair a specific malfunction. Bastian Blessing assumes no responsibility for subsequent service calls pertaining to same basic defect unless special authorization is given.

GENERAL

5. The term "Original user purchaser" as used herein shall mean that person, company or organization for whom the equipment is originally installed.

   This warranty is a service agreement between the user purchaser and Bastian Blessing for the purpose of fulfillment of the expressed warranty obligations during the term of the warranty.

   Warranty covers original user purchaser and original equipment components only.

   Bastian Blessing neither assumes nor authorizes any person to assume any obligation other than that covered in this warranty and warranty applied only within the boundaries of the United States of America, its territories and possessions.

BASTIAN BLESSING FOOD SERVICE EQUIPMENT CO., INC.
SUBSIDIARY OF BASTIAN BLESSING COMPANY, INC.
GRAND HAVEN, MICHIGAN 49417

Becton Dickinson Medical Systems (Division of Becton, Dickinson and Company)—The warrantor in this case specifically tells the buyer how to notify the company in the event that a defect develops, and what kinds of information must be made available at that time. It also contains a proviso that should the defect be a consequence of misuse, the manufacturer will bill the warrantee for the repair at prevailing labor and material rates.

* * * *

WARRANTY

Becton Dickinson Medical Systems, Division of Becton, Dickinson and Company, warrants each instrument manufactured by it to be free of defects in material and workmanship for a period of one year after delivery to the original purchaser, or a period of one year after installation completion if such installation is required by Becton Dickinson Medical Systems. This warranty shall only be effective when such instrument has been examined and found to be defective by an authorized Becton Dickinson Medical Systems serviceman. This warranty shall be void if such defect is as the result of misuse or abnormal conditions of operation, or has been repaired or replaced by an unauthorized person. Accessories, and parts normally considered expendable, are warranted for a period of 30 days after delivery. The liability of Becton Dickinson Medical Systems under this warranty is limited to repair or replacement of any defective parts at the sole discretion of Becton Dickinson Medical Systems.

If a defect develops, the following procedure must be followed:

1. **Notify the Becton Dickinson Medical Systems Service Department, giving full details of the defect; model and serial numbers of the instrument must be included. Upon receipt of this information, you will be notified as to service arrangements. All servicing at customer's location shall be during normal working hours. All labor for servicing after normal working hours shall be billed at fifty per cent (50%) of the rate for service then in effect.**
2. **In the event you are instructed to return the instrument to Becton Dickinson Medical Systems, you will be notified as to the appropriate service center. When so instructed, the instrument should be forwarded prepaid to the designated center.**

If the defect is as the result of misuse, abnormal conditions of operation, or as the result of unauthorized repair, all necessary parts and labor shall be billed at rates then in effect.

The foregoing warranty is exclusive and in lieu of all other warranties expressed or implied.

BECTON DICKINSON

McCulloch Corporation—The limited warranty used by McCulloch is applicable to both industrial and consumer purchasers of its chain saws.

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McCULLOCH CORPORATION

Please complete and return this postcard to enable McCulloch to contact you, if necessary.

(Please Print)

NAME _____ DATE PURCHASED

ADDRESS _____

CITY _____ STATE _____ ZIP _____

IS THIS THE FIRST CHAIN SAW YOU HAVE EVER OWNED? 1 ☐ YES 2 ☐ NO

THIS CHAIN SAW WAS PURCHASED FROM THE FOLLOWING SOURCE: *(Check One)*

1 ☐ HARDWARE, LUMBER OR HOME CENTER
2 ☐ DEPARTMENT OR DISCOUNT STORE
3 ☐ LAWNMOWER SHOP OR NURSERY
4 ☐ FARM SUPPLY OR EQUIPMENT DEALER
5 ☐ LOGGERS SUPPLY
6 ☐ OTHER _____

THE MAIN USE OF THIS CHAIN SAW WILL BE: *(Check One)*

1 ☐ HOME OR HOBBY
2 ☐ FARM OR RANCH
3 ☐ LOGGING
4 ☐ PULPWOOD
5 ☐ PROFESSIONAL TREE CARE
6 ☐ COMMERCIAL OR GOV'T.
7 ☐ OTHER _____

PLEASE COMPLETE SERIAL NUMBER | MODEL NUMBER | FACTORY NUMBER

KEEP THIS PART OF CARD AS YOUR RECORD OF PURCHASE

PURCHASED FROM _____ DATE PURCHASED _____

McCULLOCH CORPORATION • 5400 ALLA ROAD • LOS ANGELES • CALIFORNIA

PLEASE COMPLETE SERIAL NUMBER | MODEL NUMBER | FACTORY NUMBER

LIMITED WARRANTY

1. *Duration*
   A. One year from date of original purchase when used for personal, family or household purposes or when used for farm/ranch purposes provided that they are not professional cutting or commercial purposes.
   B. Sixty (60) days from date of original purchase when used for purposes other than noted in "A" above, e.g., professional cutting, commercial, rental, institutional, etc.
   C. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.
2. *Who gives this warranty*
   McCulloch Corporation (Warrantor) 5400 Alla Road—P.O. Box 92180
   Telephone: (213) 390-8711 Los Angeles, California 90009
3. *Who receives this warranty*
   A. The buyer (other than for purposes of resale) of the McCulloch product.
   B. Any person to whom such product is transferred within the duration of the implied or written warranty applicable to the product.
   C. Any other person who is entitled by the terms of the warranty or under applicable State Law to enforce against the Warrantor the obligation of the warranty.
   (The above mentioned parties are hereinafter referred to as "Consumer".)
4. *What products are covered by this warranty*
   A. Any McCulloch chain saw, chain guide bar, saw chain or sprocket supplied or manufactured by the Warrantor.
   B. Any McCulloch hedgetrimmer, all purpose drill, or attachment.
5. *What IS covered under this warranty*
   Any failure which occurs within the duration of the warranty period which is the result of defects in materials or workmanship.
6. *What IS NOT covered under this warranty*
   A. ANY INDIRECT OR CONSEQUENTIAL DAMAGES THAT MAY RESULT FROM THE FAILURE OR MALFUNCTION OF THE McCULLOCH PRODUCT. (SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THESE LIMITATIONS MAY NOT APPLY TO YOU.)

WARRANTY CONTINUED ON REVERSE SIDE

B. Any failure that results from an accident, consumer's abuse, neglect or failure to operate the product in accordance with the instructions provided in the owner's manual(s) supplied with the product, and normal wear.
C. Pre-delivery set up which includes installation of the chain guide bar and saw chain.
D. Normal adjustments which are explained in the owner's manual provided with the product, *i.e.*, carburetor, automatic oiler and chain tensing adjustments.
E. Any component not sold or manufactured by the Warrantor.
F. Sharpening the saw chain or damage to the chain, guide bar and/or sprocket due to poor saw chain maintenance.
G. Items of service that are normally required to maintain the product, *i.e.*, spark plugs, filters, lubricants and periodic tune up service.

7. *Responsibilities of Warrantor under the warranty*
A. Repair or replace components which have failed within the duration of the applicable warranty period at no cost to the consumer.
B. Ensure that the authorized repair station is reimbursed for parts and labor costs incurred due to performance of a warranty repair in accordance with established policies and procedures.

8. *Responsibilities of the Consumer under this warranty*
A. Deliver or ship the McCulloch product covered under this warranty to the dealer from whom it was originally purchased or the nearest McCulloch Authorized Service Center (MASC).
B. Freight costs, if any, will be borne by the consumer.
C. Use reasonable care in maintenance, operation, and storage of the product as explained in the owner's manuals.
D. It IS NOT necessary to return the attached postcard to obtain warranty coverage.

9. *When Warrantor will perform obligation under this warranty*
A. Warrantable product failures will be scheduled and repaired according to the normal work flow at the servicing location and depending on the availability of replacement parts.
B. Repair time which exceeds ten (10) days from the time the product was delivered to the servicing agent will extend the warranty coverage by the number of days the product remained inoperable.

10. *Remedies*
A. If Consumer does not receive satisfactory results from local servicing outlet, Consumer must contact the McCulloch Corporation, Product Service Department (See Item 2).
B. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Medrad Corporation—This warrantor chooses to warrant only particular parts of its product that are most likely to create operational difficulties for its customers. This warranty provides a two-year coverage for major parts of its unit, and six-month coverage for those components of lesser importance (those more likely to fail). Certain parts, such as light bulbs and disposable items, are not warranted at all.

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medrad

MANUFACTURER'S WARRANTY

Medrad warrants the injector head and control unit only of each new angiographic injector system sold by its representatives or authorized agents against defects in material and workmanship, under normal use and service, for a period of two years from the date of installation. Medrad warrants cable assemblies, pressure jackets and plastic covers of each new injector system sold by its representatives or authorized agents against defects in material and workmanship, under normal use and service, for a period of six (6) months from installation. Light bulbs and disposable items are not warranted in any way.

During the warranty period Medrad will, at its option, repair or replace, with no charge for parts or labor, any component parts which in Medrad's judgment are defective in material or workmanship. During the first six (6) months of the warranty period, Medrad will make no charge whatsoever in fulfilling the terms of the warranty. After the first six (6) month period, Medrad will be paid the current handling charge to cover packing and one-way surface shipping of replacement components or subassemblies and, if field service is required, travel time to and from the installation at the current standard rate, but there will be no charge for parts, labor, components or subassemblies covered by this Warranty.

This Warranty shall not apply to any unit which has been repaired or altered in such a way as, in Medrad's judgment, to affect its operation, safety or reliability. This Warranty shall not apply to any unit which has been subject to misuse, negligence or abuse.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS, AND ALL SUCH OTHER WARRANTIES ARE EXPRESSLY EXCLUDED HEREBY. THE REMEDIES AND DAMAGES FOR ANY BREACH ARE LIMITED TO THOSE SPECIFICALLY SET FORTH IN THIS WARRANTY.

Medrad neither assumes, nor authorizes any other person or corporation to assume or commit for it, any other liability of any kind whatsoever in connection with the sale or use of its angiographic injector systems, or any part thereof.

medrad
TECHNOLOGY FOR PEOPLE
566 Alpha Drive Pittsburgh, Pa. 15238

The Vendo Company—This warrantor has separate warranties for new and reconditioned machines. Illustrated is the warranty for the latter, one of the few examples shown that covers used equipment.

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Vendo® WARRANTY

RECONDITIONED VENDING MACHINES

1. This is a limited warranty.

2. The Vendo Company warrants to the original purchaser each part of each reconditioned vending machine for a period of six (6) months from date of shipment, to be free from defects in material and workmanship. This warranty does not include light bulbs, fuses, finish or operating supplies.

3. To qualify for warranty replacement, all returns must be completed within the warranty period and accompanied by a record of the cabinet model and serial number. If found to be inoperative due to defects in material and/or workmanship, we will, at our option, repair or furnish a reconditioned or new replacement part or refrigeration system, at no charge.

4. The Vendo Company will pay normal transportation charges on parts and refrigeration systems replaced under this warranty. If special handling or premium transportation is requested, the charges are assumed by the purchaser.

5. Any parts and/or refrigeration systems replaced during the warranty period are warranted for the time remaining on the original warranty.

6. This warranty does not apply to machines located outside the United States, to equipment sold "as is" or to components designed to work on current other than 110/120 volts, 60 cycle as specified on the serial tag.

7. Title and risk of loss pass to the purchaser on delivery to the common carrier of the vending machine, replacement part and/or refrigeration system. All loss and damage claims are the responsibility of the purchaser and must be filed with the delivering carrier.

8. This warranty does not include servicing.

9. The Vendo Company reserves the right to make design changes, additions to, and improvements upon any of our products without incurring any obligations to incorporate same on any products previously manufactured.

10. This warranty is in lieu of all other express warranties or other obligations or liabilities on our part, and we neither assume nor authorize any person to assume for us, any other obligation for liability in connection with the sale of said machine or other part thereof. All implied warranties beyond the term of this limited warranty are disclaimed by the company.

THE VENDO COMPANY

Standard Electric Time Corporation—This warranty, which appears in letter form, describes the particular product parts that are not warranted for the normal one-year period.

* * * *

Standard Electric Time Corp.
89 Logan Street
Springfield, Massachusetts 01101
413-732-1141

Standard Electric Time Corp.

WARRANTY

Standard Electric Time Corp. warrants the products it manufactures to be free from defects in material and workmanship and agrees to correct by repair or replacement of the part, or parts, any such defect disclosed on examination by us and which developed under normal installation, use and service, provided these defects are not caused by abuse, accident, or neglect, for a period of one year, (except 90 days for tubes, lamps, fluistors, fuses, and similar items) from the date of shipment to the original purchaser.

The Company does not assume responsibility for unauthorized repairs to apparatus even though defective.

This warranty is in lieu of all other warranties expressed or implied, and no representative or person is authorized to assume for us any of the liability in connection with the sale of our products. Standard Electric Time Corp. shall not be liable for consequential damages.

Any equipment returned to our factory under this warranty shall be returned all transportation charges prepaid. Authorization to repair and a return material tag must be first obtained from one of our branch offices, or from the Sales Department in Springfield, Massachusetts. The return material tag must be filled out with an explanation of defects and other pertinent information requested on return tag. One tag should be obtained for each defective piece of equipment.

STANDARD ELECTRIC TIME CORP.

Cessna, Fluid Power Division—In some instances, as in this one, a description of the firm's warranty policy becomes a substitute for a formal warranty statement itself.

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Cessna

WARRANTY POLICY

Cessna will review warranty claims and failed units (if returned) and determine responsibility of failure. On claims accepted as Cessna responsibility due to defective material or workmanship, credit will be issued for the service parts responsible at the current OEM service parts prices. Complete units will not be accepted for credit consideration unless repair parts exceed cost of new unit.

An appropriate summary sheet and credit memo will be provided by Cessna after the review is completed. The credit memo will cover the cost of the parts accepted under warranty.

All claims should be properly cross-referenced to the Cessna part numbers to identify the parts involved with the warranty claim. If not cross-referenced, then the Cessna parts must be identified.

Due to the nature of hydraulic products, Cessna reserves the right to request any or all failed units to accompany the claim to support the request for warranty. All claims must include specific information regarding date of sale, hours of use, exact nature of failure, and serial code of hydraulic components involved, if available.

All Cessna designed products are warranted against defective workmanship or materials. Our warranty is limited to repair or replacement of defective units at current OEM prices. Our warranty covers our products for 30 months from date of manufacture, 12 months from date of retail sale, or 1000 hours of operation, whichever occurs first.

Onan Corporation—This warranty illustrates one that is conditioned by various product applications, ranging from personal to commercial-industrial use.

* * * *

Onan

MANUFACTURER'S LIMITED WARRANTY

Onan extends to the original purchaser of goods for use, the following warranty covering goods manufactured or supplied by Onan, subject to the qualifications indicated.

THERE IS NO OTHER EXPRESS WARRANTY.

IMPLIED WARRANTIES INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO PERIODS OF WARRANTY SET FORTH BELOW AND TO THE EXTENT PERMITTED BY LAW, ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED.

IN NO EVENT IS ONAN LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Note: *Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply in every instance.*

(1) Onan warrants to original purchaser for the periods set forth below that goods manufactured or supplied by it will be free from defects in workmanship and material, provided such goods are installed, operated, and maintained in accordance with Onan's written instructions, and further provided, that installation inspection and initial start-up on commercial-industrial generator set or power system installations are conducted by an Onan Authorized Distributor or its designated service representative.

	PRODUCT APPLICATION	PERIOD OF WARRANTY
☐	Goods used in personal, family and household applications.	One (1) year from date of purchase.
☐	Goods used in commercial-industrial applications.	One (1) year from date of purchase.
☐	Commercial-industrial stationary generator sets.	One (1) year from date of initial start-up.
☐	Commercial-industrial, standby power systems with nominal operating speeds of 1800 rpms or less which are installed in the U.S. or Canada (must include Onan supplied generator sets, automatic transfer switch, exerciser and running time meter).	* Five (5) years or 1500 hours, whichever occurs first from the date of initial start-up. Labor allowance for the first two (2) years or 1500 hours, whichever occurs first from the date of initial start-up.
☐	Commercial-industrial, standby power systems with nominal operating speeds of 1800 rpms or less which are installed outside the U.S. or Canada (must include Onan supplied generator set, automatic transfer switch, exerciser and running time meter).	* Two (2) years or 1500 hours, whichever occurs first from the date of initial start-up.
☐	Repair or replacement parts.	Ninety (90) days from date of purchase, excludes labor.

* Must be registered within thirty (30) days of initial start-up on Form No. **23C065**, to be provided and completed by seller.

* Optional engine coolant heaters are warranted for one (1) year only.

(2) Onan's sole liability and Purchaser's sole remedy for a failure of goods under this warranty and for any and all other claims arising out of the purchase and use of the goods, including negligence on the part of the manufacturer, shall be limited to the repair of the product by the repair or replacement, at Onan's option, of parts that do not conform to this warranty, provided that the product or parts are returned to Onan's factory at 1400 73rd Avenue N.E., Minneapolis, Minnesota 55432, or to an Onan Authorized Distributor or its designated service representative, transportation prepaid.

Except as indicated below, this warranty does not include travel time, mileage, or labor for removal of Onan product from its application and reinstallation.

a) Removal and Reinstallation

Onan will pay the following stated labor at straight time only for warranty work requiring removal and reinstallation of Onan Products in the following applications, provided, such warranty labor is performed by an Onan Authorized Distributor or its designated service representative:

i. *On-Highway Recreational and Commercial Vehicle Applications*—Up to a maximum of one (1) hour for Onan engineered Power Drawer® or slide-out type generator set installations.

—Up to a maximum of two (2) hours for all other permanent type generator set installations.

ii. *Marine Product Installations*—Up to a maximum of four (4) hours for all single and two cylinder engine powered Marine Generator Sets installed below-deck.

—Up to a maximum of eight (8) hours for all four and six cylinder engine powered Marine Generator Sets installed below-deck.

iii. All single and two cylinder gasoline, and single cylinder diesel industrial engines—Up to a maximum of two (2) hours.

iiii. All four cylinder gasoline, two and four cylinder diesel industrial engines—Up to a maximum of four (4) hours.

b) Travel Time and Mileage

i. *Marine Generator Set Installations*—Onan will for six (6) months after date of purchase, pay travel time up to two and one half (2½)) hours and mileage cost up to one hundred (100) miles on generator sets with a kilowatt (kW) rating of fifteen (15) or less, and up to six and one half (6½) hours and mileage cost up to two hundred fifty (250) miles on generator sets with a kilowatt (kW) rating above fifteen (15) for related warranty repairs, provided, such travel and repairs are performed by an Onan Authorized Distributor or its designated service representative.

ii. *Industrial Floodlighter Generator Sets*—Onan will for six (6) months after date of purchase, pay travel time up to two and one half (2½) hours and mileage cost up to one hundred (100) miles for related warranty repairs, provided, such travel and repairs are performed by an Authorized Distributor or its designated Service Representative.

iii. *Commercial-Industrial Standby Generator Set and System Installations*—Provided the generator set or system is permanently wired in a stationary installation, Onan will, for six (6) months after initial start-up, pay travel time up to two and one half (2½) hours and mileage cost up to one hundred (100) miles on generator sets with a kilowatt (kW) rating of seventeen and one half (17.5) or less, and up to six and one half (6½) hours and mileage cost up to two hundred fifty (250) miles on generator sets with a kilowatt (kW) rating above seventeen and one half (17.5) and for transfer switches used with industrial standby generator set and system installations, for warranty repairs performed by an Onan Authorized Distributor or its designated service representative.

(3) All claims must be brought to the attention of Onan or an Authorized Distributor or its designated service representative within thirty (30) days after discovery that goods or parts fail to meet this warranty.

(4) THIS WARRANTY SHALL NOT APPLY TO:

a) Cost of maintenance, adjustments, installation and start-up.
b) Failures due to normal wear, accident, misuse, abuse, negligence or improper installation.
c) Products which are altered or modified in manner not authorized by manufacturer in writing.
d) Failure of goods caused by defects in the system or application in which the goods are installed.
e) Telephone, telegraph, teletype or other communication expenses.
f) Living and travel expenses of persons performing service, except as specifically included in Section 2.
g) Rental equipment used while warranty repairs are being performed.
h) Overtime labor requested by purchaser.
i) Starting batteries.

No person is authorized to give any other warranties or to assume any other liabilities on Onan's behalf, unless made or assumed in writing by an officer of Onan, and no person is authorized to give any warranties or assume any other liability on behalf of Seller unless made or assumed in writing by Seller.

(5) This warranty gives the user specific legal rights, and the user may also have other rights which vary from state to state.

Ken Cook Company—The warrantor in this case seeks to restrict warranty coverage to the product's original purchaser. It offers easily read instructions on how to use the warranty privileges that are part of the purchase.

* * * *

WARRANTY

KEN COOK CO. warrants to the original purchaser that this SR 100 is free from defects in material and workmanship. Within six (6) months from date of purchase, **KEN COOK CO.** will remedy any such defect free of charge. Defective parts will be replaced at no charge for a period of one (1) year from date of purchase.

+ Warranty registration card must be filled out and mailed within 10 days of receipt of equipment in order to validate warranty.
+ **KEN COOK CO.** shall have the right to determine the validity of all warranty claims.
+ Warranty is void if equipment serial number has been altered or removed.
+ Warranty is void if equipment has been misused or damaged and if evidence is present that the equipment was altered, modified or serviced by unauthorized service people.
+ Warranty does not cover replacement of lamps.
+ **THIS LIMITED WARRANTY IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND OF ANY OTHER OBLIGATIONS OR LIABILITY ON THE PART OF THE MANUFACTURER, AND KEN COOK CO. NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH SUCH UNIT.**

This equipment has been thoroughly tested and inspected at the factory prior to shipment. Nevertheless, inspect your unit completely for any damage or loss of parts that may have occurred during shipment. Notify the delivering carrier promptly if damage claims are to be filed.

PROCEDURE FOR USING WARRANTY PRIVILEGES

Should your unit require servicing, contact the dealer from whom you purchased it. Advise him of the problem you are having and give him model and serial number identification. He will authorize and repair the unit OR will supply you with the name and address of the nearest **KEN COOK CO.** Authorized Service Center.

Equipment may not be returned to the factory without prior consent and all shipments to the factory must be sent freight prepaid. **KEN COOK CO.** will pay freight on the return of equipment covered by valid warranty claims. Equipment returned must have included in the package, a statement covering the nature of the malfunction, name of the person returning the unit and the address to which the equipment should be returned. No unit should be shipped except in the original factory packaging or its equivalent to provide adequate protection.

KEN COOK CO. RESERVES THE RIGHT TO MODIFY OR UPDATE ITS EQUIPMENT WITHOUT OBLIGATION TO REPLACE ANY EQUIPMENT DELIVERED PRIOR TO ANY SUCH CHANGE.

Infotron Systems—In this instance, the warranty statement includes a description of the costs of an out-of-warranty service plan for repairing and reprogramming the primary components of the seller's product, as well as an on-call service plan for making on-site repairs.

* * * *

Infotron Systems

DOMESTIC WARRANTY, SERVICE, AND INSTALLATION PLANS

GENERAL

All INFOTRON products are engineered and manufactured to the highest standards, and each carries a one year factory warranty. The warranty covers components and labor costs. In addition to the warranty, INFOTRON offers a choice of three service programs. Each provides a separate type of coverage, allowing INFOTRON customers

SERVICE PLANS

INFOTRON supports its products through three service plans:

- Out-of-Warranty Service Plan — factory service performed at prevailing rates.

the opportunity to select the plan or combination of plans that best suits their needs. The plans are:

- Out-of-Warranty Service
- On-Call Service
- Fixed-Price Service

All service is coordinated by our Systems Service Manager from our home office in Cherry Hill, New Jersey. This allows INFOTRON to maintain control of problems that require simultaneous service action for equipment located throughout the United States. For service, call toll-free 800-257-8352 (in New Jersey 609-424-9400).

WARRANTY STATEMENT*

INFOTRON products are warranted against defects in material and workmanship for one (1) year from date of shipment. During the warranty period, INFOTRON will repair or, at its option, replace components that prove to be defective at no cost to the customer, except the one way shipping cost of the failed module to the INFOTRON Customer Service Facility, Cherry Hill Industrial Center, Cherry Hill, New Jersey 08003.

This warranty does not apply if the equipment has been damaged by accident, neglect, misuse, causes other than ordinary use, or as a result of service or modification other than performed or authorized by INFOTRON.

This warranty specifically excludes damage incurred in shipment to or from INFOTRON Systems Corporation. In the event an item is received in damaged condition, the carrier should be notified immediately. All claims for such damage should be filed with the carrier.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESSED, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL INFOTRON BE LIABLE, WHETHER IN CONTRACT, IN TORT OR ON ANY OTHER BASIS, FOR ANY DAMAGES SUSTAINED BY THE CUSTOMER OR ANY OTHER PERSON ARISING FROM OR RELATED TO LOSS OF USE, FAILURE OR INTERRUPTION IN THE OPERATION OF ANY PRODUCTS, OR DELAY IN MAINTENANCE OR FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT OR SPECIAL DAMAGES OR LIABILITIES, OR FOR LOSS OF REVENUE, LOSS OF BUSINESS OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE, LEASE, MAINTENANCE, USE, PERFORMANCE, FAILURE OR INTERRUPTION OF THE PRODUCTS.

- On-Call Service Plan — on-site service and parts billed at the prevailing rates.
- Fixed-Price Service Plan — all parts and on-site service covered by a fixed monthly fee.

Out-of-Warranty Service Plan

All INFOTRON products are warranted for one year. For the following five years, customers may elect to receive continued service through our Out-of-Warranty Service Plan. Under this plan, nominal charges are made for repairing and reprogramming components at our factory. Charges presently are:

Printed Circuit Board	—	$ 40.00
Microprocessor Board	—	$140.00
9600 Modem Board	—	$150.00
Power Supplies	—	$ 25.00/hr. plus parts
Reprogramming	—	$ 5.00/program plug

All work will normally be completed and shipped within 48 hours after receipt. The customer pays the shipping costs to our facility in Cherry Hill, New Jersey.

On-Call Service Plan

Under this plan, a trained INFOTRON field service engineer from our Cherry Hill facility will be at your site typically within eight business hours to repair any INFOTRON equipment. Charges presently are:

- $30.00/hr. travel to and from the site; and $30.00/hr. for on-site technical services. Maximum on-site charge is $120., provided that the service engineer has access to the system and the problem is an INFOTRON problem.
- Prices of parts not covered under warranty.
- Travel expenses.

Industrial Nucleonics Corporation—This warranty is notable for the amount of space devoted to the issue of protection against inadvertent patent infringement.

* * * *

WARRANTY:

15. Within a period of 90 days from start of installation or a period of 180 days from the date of shipment, whichever period first expires, when the equipment or parts therein are used in normal service by the original purchaser, AccuRay agrees to furnish free of charge, any necessary replacements for originally furnished parts proven defective in workmanship or material.
16. AccuRay shall in no event be liable for consequential or special damages.
17. AccuRay shall arrange for the defense of any suit or legal proceeding brought against Customer by any third party so far as it is based on a claim that the equipment, or any part thereof, furnished hereunder constitutes an infringement of any patent of the United States or of the country in which said equipment is initially installed for use, if notified promptly by Customer in writing and given authority, information and assistance (at AccuRay's expense) for the defense of same, and if given such authority, information and assistance, AccuRay shall pay all damages and costs awarded against Customer for such patent infringement; provided that AccuRay shall not be obligated to defend nor be liable for any patent infringement based upon (a) the manufacture, use or sale of said equipment or parts thereof in a combination not specified in writing by AccuRay; or (b) manufacture, use or sale of equipment, or any part thereof, according to a design furnished by Customer. In addition, AccuRay may, at it's option and at own expense, either procure for Customer the right to continue using said equipment or part, or replace it with comparable non-infringing equipment or modify it so that it becomes non-infringing, or remove said equipment and refund the purchase price less a fair and reasonable rental fee not to exceed the purchase price of said equipment. THE FOREGOING STATES THE ENTIRE LIABILITY OF ACCURAY FOR PATENT INFRINGEMENT BY SAID EQUIPMENT OR ANY PART THEREOF.
18. AccuRay warrants that the title conveyed shall be good, and its transfer rightful; and that the goods delivered are free from any security interest or other lien of encumbrance of which the buyer at the time of contract has no knowledge.
19. ACCURAY SHALL NOT BE DEEMED TO BE OBLIGATED, LIABLE OR ACCOUNTABLE UPON OR UNDER ANY GUARANTEE OR WARRANTY, EXPRESSED, IMPLIED, ARISING BY OPERATION OF STATUTORY OR OTHER LAW, OR OTHERWISE, IN ANY MANNER OR FORM BEYOND THE WARRANTIES EXPRESSLY MADE IN THIS SECTION.

RETURNS:

20. No equipment or parts may be returned for credit without written approval from AccuRay's home office.
21. Equipment or parts for which return is authorized must be shipped prepaid by Customer to AccuRay's plant in Columbus, Ohio.

CANCELLATION CHARGES PRIOR TO DELIVERY:

22. Failure to accept and pay for equipment or parts ordered will subject Customer to cancellation charges in whole or in part as follows:
    a. The full purchase price for equipment or parts completed, or scheduled for completion within 30 days of the date Customer gives notice of his refusal to accept shipment.
    b. Full costs, including overhead, plus 50%, for all equipment and parts actually in process and which are scheduled for completion more than 30 days from the date Customer gives notice of his refusal to accept shipment.
    c. AccuRay's full cost plus 25% for any raw materials or supplies purchased or contracted for by AccuRay's order as of the date Customer gives notice of his refusal to accept shipment.

REPRODUCTION OF DOCUMENTS:

23. When reproducible masters of drawings or other documents bearing "proprietary data" legend are furnished to the Customer, a reasonable number of copies may be made: (a) for the Customer's own use and; (b) for the use of qualified vendors or parts suppliers, to the extent necessary for installation, operation, or maintenance of equipment. No other disclosure, reproduction, or other use of documents bearing a restrictive legend may be made except by written permission from AccuRay.

USE OF TRADEMARKS:

24. The acceptance by AccuRay of an order from Customer for equipment bearing the registered trademark AccuRay, or other marks of AccuRay, does not automatically grant to Customer the right to use such marks in advertising his products. All advertising material incorporating such marks in any manner must be approved by AccuRay's home office prior to its release to the public.

RECOMMENDATIONS:

25. AccuRay may make suggestions for Customer's consideration relating to Customer's processes. Such suggestions will be based on AccuRay's best understanding of Customer's processes, but any process modifications or adjustments based on such suggestions shall be made at Customer's sole risk.

CORRECTION OF ERRORS:

26. AccuRay reserves the right to correct any obvious errors in specifications or prices.

NOTICES:

27. Notices deliverable under this Agreement to be sent by registered mail, and shall be deemed given when so mailed.

Rollei of America, Inc.—This warranty, one of the few "full" warranties encountered in the study, applies to both consumer and industrial photographic goods. It describes what the company will do and the best ways to obtain service. It also notes that the warranty has been redrafted to comply with provisions of the Magnuson-Moss Act.

* * * *

Rollei

Rollei of America, Inc.

FULL ONE YEAR WARRANTY

THIS WARRANTY STATEMENT HAS BEEN DRAFTED TO COMPLY WITH RECENT FEDERAL CONSUMER WARRANTY LEGISLATION. THIS WARRANTY SUPERSEDES AND REPLACES ANY WARRANTY STATEMENTS CONTAINED IN THE INSTRUCTION BOOK OR ANY OTHER MATERIAL PACKAGED WITH THIS PRODUCT. THIS WARRANTY IN NO MANNER REDUCES THE COVERAGE PROVIDED UNDER THE WARRANTY IT REPLACES.

Rollei warrants this product to be free from defects in material and workmanship for a period of one (1) year.

WHAT ROLLEI WILL DO

If this product fails because of defects in material or workmanship within one year from date of original purchase, we will repair or replace the product without charge to you within a reasonable time. Parts and service labor are included.

HOW TO OBTAIN SERVICE

If this product needs service, take it, or package it carefully and mail it, to the nearest Rollei of America, Inc. Service Center listed.

In your package **you must** include a bill of sale or other dated proof of original purchase and a note describing the problem. To help us locate the problem, please also include all accessory items, such as cords, chargers or batteries, related to the product and any sample pictures you may have that show the problem.

Completing and mailing the owner's registration card is not necessary to obtain warranty coverage.

LIMITATIONS

This warranty shall not apply if it is shown by Rollei that the defect or malfunction was caused by damage resulting from operation of the product contrary to instructions contained in the owner's manual, or any misuse or abuse of the product by a consumer. Also, this warranty does not cover any defect which has occurred as a result of any modification made by anyone other than Rollei.

Excluded from this warranty are fuses, lamps, non-chargeable batteries, and similar disposable items.

Rollei's sole responsibility shall be to repair or replace this product within the terms stated above. ROLLEI SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF ANY WARRANTY, EXPRESS OR IMPLIED, APPLICABLE TO THIS PRODUCT. Since some states do not allow the exclusion or limitation of consequential damages, this limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Halsey Taylor Division, King-Seeley Thermos Company—The warrantor here describes not only the protection offered during the one-year period following the purchase of one of its water coolers, but also the terms of an extended-term replacement contract.

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Halsey Taylor Division King-Seeley Thermos Co.

Limited Product Warranty

One Year Warranty

The Halsey Taylor Division warrants every water cooler and accessory it manufactures to be free from defects in material and workmanship under normal use and service for a period of one year from date of original installation, provided original installation is made within 12 months from date of shipment from factory. Halsey Taylor Division's obligation shall be limited to repairing or replacing any part of the water cooling equipment which Halsey Taylor examination discloses to be thus defective and which has not been subject to any accident, alteration, abuse or misuse. We do not warrant against defects due to improper installation or failure to exercise normal maintenance, nor against the consequences of uses for which our products were not designed.

Four-Year Replacement Contract

The Halsey Taylor Division agrees to replace any part of the hermetically sealed refrigeration system (including the tank and cooling coil) which becomes inoperative during the next four years following the expiration of the one year warranty. The Halsey Taylor Division's obligation shall be limited to repairing or replacing any part of said hermetically sealed refrigeration system which Halsey Taylor Division's examination discloses to be defective due to factory workmanship or material.

This four year replacement contract does not apply to any of the cabinet or its finish. It does not apply to the cold control, the fan, the fittings, the relay or any part of the water cooler other than the hermetically sealed system. It does not apply to any part which has been subjected to accident, alteration, abuse or misuse. It does not provide for service calls, to make adjustments, clear water stoppages, or other attention required by the water cooler or its mechanism except the hermetically sealed refrigeration system as provided for above.

THIS ONE YEAR WARRANTY AND FOUR YEAR REPLACEMENT CONTRACT WILL BE HONORED BY THE ENCLOSED LIST OF AUTHORIZED SERVICE CENTERS. WHERE SERVICE CENTERS ARE NOT AVAILABLE, CONTACT THE MANUFACTURER FOR REPAIR INSTRUCTIONS.

Preway Inc.—This 25-year warranty in unusual in the length of the coverage period, and also in the multistage schedule of costs to be borne by the buyer in various years. The buyer is protected entirely through the first ten years, then for 50 percent of current list price during the next five years, and then for 25 percent of the list price during the remaining ten years.

* * * *

Limited 25-Year Warranty

The following products are covered by this warranty: Preway Models BI28 BI36, BI42 BI42R BI42L BI28EM BI36EM BI42EM and all Preway chimney components used with them. (U.L. Listed Preway fireplace installations require use of Preway chimney components.)

Preway Inc., warrants to each original retail purchaser that each product or part manufactured by Preway will be free from defects in material and workmanship for twenty-five years from date of purchase under normal use and service. The door glass, firebrick and refractory hearth are not included in this warranty. Both firebrick and refractory hearth are cement products that will expand and contract with heat and subsequent cooling. The function of the fireplace will not be impaired by cracking.

Preway's duty in event of defect shall be limited as follows: For the first year from date of purchase, Preway will replace or repair any defect in material or workmanship at no cost to the buyer or, at Preway's option, refund the original purchase price of the Preway fireplace or chimney. For the next twenty-four years Preway will furnish replacement parts on the following schedule, but the buyer must bear all other expenses in connection with the repair or replacement, including labor:

years 2 through 10 — no charge except shipping
years 11 through 15 — 50% off then current list price
years 16 through 25 — 25% off then current list price

ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS IS LIMITED TO THE DURATION OF THIS EXPRESS WARRANTY. IN THE EVENT OF BREACH OF AN IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS, THE TERMS OF THIS WARRANTY SHALL CONSTITUTE THE BUYER'S SOLE AND EXCLUSIVE REMEDY. IN NO EVENT AND AT NO TIME WILL PREWAY BE LIABLE FOR BREACH OF WARRANTY, WHETHER EXPRESS OR IMPLIED (INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS), IN AN AMOUNT GREATER THAN THE ORIGINAL PURCHASE PRICE OF THE PRODUCTS DESCRIBED BY THIS WARRANTY. No agent, distributor, salesman, wholesale or retail dealer has authority to bind Preway to any other affirmation, representation or warranty concerning these goods. Any sample or model shown the buyer is for illustration use only. Preway does not assume responsibility for poor draft caused by air conditioning systems, heating systems or any other mechanical devices, or caused by negative pressure created by irregular wind currents.

To obtain Preway's performance, the buyer must take the following two steps: (1) Notify Preway (at address below) of the problem; (2) permit examination by Preway, which examination must establish satisfactory proof that the problem is due to a defect in material or workmanship.

This warranty is not effective unless and until you complete and return the attached registration form; if you do not return the registration statement to us, this warranty is void.

Some states do not allow limitations on how long an implied waranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you also may have other rights which vary from state to state.

PREWAY
a nice warm feeling®

1430 Second Street North
Wisconsin Rapids, Wisconsin 54494

The Heil Company, Bulk Trailer Division—This simple, easy-to-read warranty, which applies to mobile equipment, contains a proviso that the company's employees and agents are not permitted to alter (expand) the warranty by any representations they might make to the customer.

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HEIL
BULK TRAILERS
WARRANTY POLICY

THE HEIL CO. BULK TRAILER DIVISION WARRANTY

"We warrant trailers sold by us to be free of defects in material and workmanship. Our obligation and liability under this Warranty is expressly limited to repairing or replacing, at our option, within 12 months after date of delivery any defective Product except for maintenance items and tires which are warranted separately by the tire manufacturer. **WE MAKE NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND MAKE NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE.** Our obligation under this Warranty shall not include any transportation charges or any liability for direct, indirect or consequential damage or delay. Any improper use, operation beyond rated capacity, substitution of parts not approved by us, or any alteration or repair by others in such manner as in our judgment affects the Product materially and adversely shall void this Warranty. **NO EMPLOYEE OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY."**

The Heil Co.
Bulk Trailer Div.
3000 West Montana St.
Milwaukee, Wis. 53201

Melroe Division, Clark Equipment Company—The manufacturer, a producer of mobile equipment, goes to some length to describe various service conditions of wear and natural use that are not covered—including loss of time and inconvenience for machine downtime.

* * * *

Warranty

The Melroe Division of Clark Equipment Company (MELROE) has warranted to the dealer (Seller) who, pursuant to agreement with MELROE, hereby, on its own behalf, warrants to the Buyer each new Bobcat loader or Feller Buncher to be free from proven defects in material and workmanship under normal use and maintenance within six (6) months after delivery to the original Buyer, or 1000 hours of use by Buyer whichever shall occur first; subject to warranty limitations described below and subject to Buyer providing Seller with prompt written notice of any such defect.

As an express condition of the warranty coverage stated above, the owner is required to comply with all required maintenance services and operational limits outlined in the Owner's Manual for this Melroe product.

Seller's sole obligation under this warranty shall be limited to repairing, replacing or allowing credit for, at Seller's option, any part of the Bobcat which fails and is deemed warrantable as provided herein. Under this basic warranty, Seller will provide replacement or repair of parts at Seller's shop without charge to Buyer for the warranty time period as herein provided.

This warranty does not apply to tires, belts, electrical components or other trade accessories not manufactured by MELROE. Buyer shall rely solely on the existing warranty, if any, of the respective manufacturers thereof.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES (EXCEPT OF TITLE), EXPRESSED OR IMPLIED, AND THERE ARE NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL SELLER BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES.

WARRANTY LIMITATIONS

The following definition outlines the limits of warranty:

I. Any service adjustments necessary during the first 30 operating hours, such as:
   - A. Engine
     1. RPM
     2. Timing
     3. Fuel System
     4. Breather System
     5. Clutch Adjustment
   - B. Hydraulics
     1. Relief Pressures
     2. Flow
   - C. Hydrostatics
     1. RPM Adjustment
     2. Filter/Temperature Warning System
   - D. Steering Levers
     1. Hydrostatic Linkage Adjustment
   - E. Shear
     1. Knife Adjustment
     2. Gathering Arm/Buncher Adjustment

   Adjustments, such as above, performed after 30 operating hours will be considered normal maintenance and are the Buyer's responsibility.

II. This warranty does not cover:
   - A. Conditions resulting from misuse, negligence, alterations, accident or lack of performance of required maintenance services.
   - B. High wear items (such as oils and lubricants, filters, fuel injection systems, ignition systems, clutches, alternator-fan belts, drive belts, pivot pins). These items are classified as normal maintenance.
   - C. Items which fail due to an application or environmental condition (Example: deterioration of seals, gaskets, hoses, tubelines, rubber lines, wiring, electrical connections, etc., from sand, chemicals, falling branches, etc.). Final warranty determination in these cases will rest with the Melroe Service Department AFTER INSPECTION OF THE PARTS IN QUESTION.
   - D. Loose bolts, nuts or fittings due to overtightening or vibration, after 30 operating hours.
   - E. Problems in fuel system caused by water or dirt (example: water in an injection pump; worn needle valve on carburetor).
   - F. Loss of time, inconvenience or loss of machine use or other consequential damages.
   - G. Cooling system problems caused by air flow obstruction.
   - H. Travel time of mechanic, mileage or hauling expense.

The basis for the above definition is that the warranty is intended to cover only repairs made necessary due to defects in material or factory workmanship, and **NOT** failures caused by wear, application, environment or negligence.

For further clarification or specific questions, please contact your dealer.